Extreme 9920 Software Command Reference

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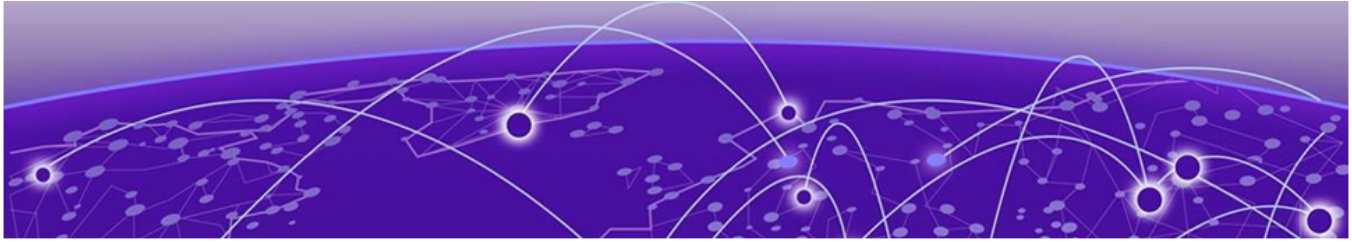

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Preface

Read the following topics to learn about:

- The meanings of text formats used in this document.
- Where you can find additional information and help.
- How to reach us with questions and comments.

Text Conventions

Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as ExtremeSwitching switches or SLX routers, the product is referred to as *the switch* or *the router*.

Table 1: Notes and warnings

Icon	Notice type	Alerts you to...
	Tip	Helpful tips and notices for using the product
	Note	Useful information or instructions
	Important	Important features or instructions
	Caution	Risk of personal injury, system damage, or loss of data
	Warning	Risk of severe personal injury

Table 2: Text

Convention	Description
`screen displays`	This typeface indicates command syntax, or represents information as it is displayed on the screen.
The words *enter* and *type*	When you see the word *enter* in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says *type*.
Key names	Key names are written in boldface, for example **Ctrl** or **Esc**. If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press **Ctrl**+**Alt**+**Del**
Words in italicized type	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
italic text	Italic text indicates variable content.
`[ ]`	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
`{ x | y | z }`	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
x | **y**	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, *member*`[`*member*`...]`.
\	In command examples, the backslash indicates a “soft” line break. When a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Documentation and Training

Find Extreme Networks product information at the following locations:

- Current Product Documentation
- Release Notes
- Hardware and software compatibility for Extreme Networks products
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Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

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3. Select a product for which you would like to receive notifications.
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- Improvements that would help you find relevant information.
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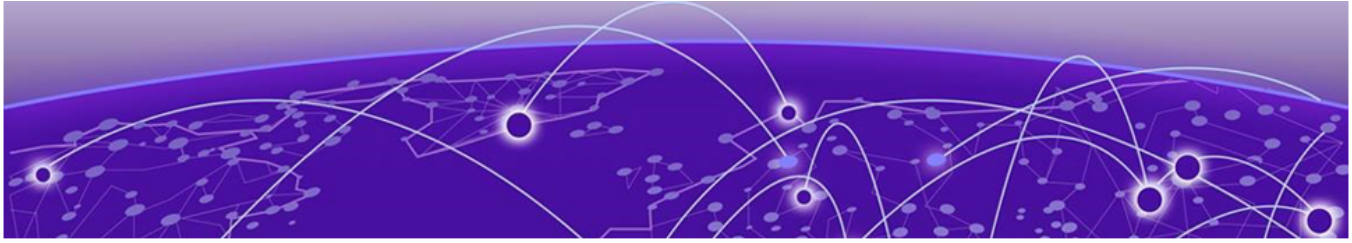

What's New in this Document

There are new and modified commands for the Extreme 9920 software, release 21.1.1.0.

New Commands

The following commands are introduced in this release.

- show running-config mac on page 243
- show running-config mirror on page 244
- show running-config ntp on page 245
- show running-config route-map on page 246
- show running-config transport-tunnel on page 251
- show usb on page 271
- show users on page 272
- snmp-server user on page 278
- traffic-type ip on page 308
- traffic-type vxlan outer ip on page 310
- traffic-type vxlan outer mirror on page 312
- traffic-type vxlan outer vni on page 314
- usb enable on page 321

Modified Commands

The following commands are modified in this release.

- aaa accounting on page 27
- address on page 31
- breakout on page 45
- clear counters access-list on page 51
- clear counters ingress-group on page 57
- clear counters interface on page 58
- clear counters transport-tunnel on page 62
- copy default-config on page 66
- copy FILE on page 67
- copy FILE1 FILE2 on page 69
- copy running-config on page 71
- crypto import type on page 73
- crypto import-pkcs on page 75
- delete on page 79
- description on page 83
- dir on page 89
- interface port-channel on page 108
- ip access-list on page 110
- ipv6 access-list on page 117
- load-balance on page 125
- mac access-list on page 127
- ntp on page 136
- ping on page 138
- port on page 140

- seq (ip access-list rules) on page 144
- seq (ipv6 access-list rules) on page 150
- seq (mac access-list rules) on page 155
- show on page 172
- show counters encap on page 185
- show interface port-channel on page 206
- show media on page 222
- show running-config aaa on page 229
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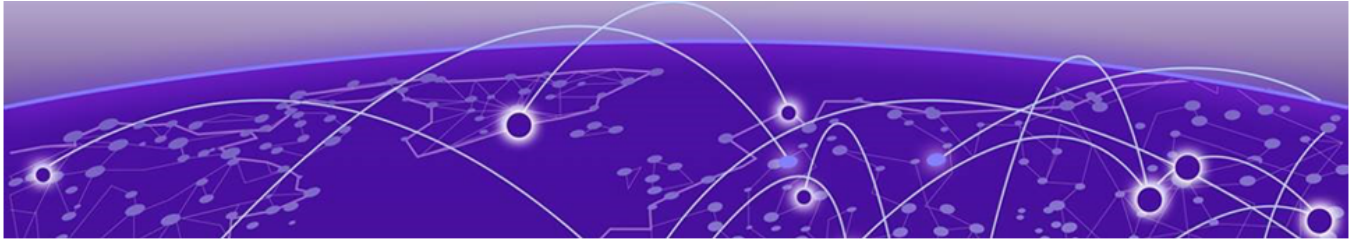
- show running-config interface on page 238
- show running-config listener-policy on page 242
- show running-config snmp-server on page 247
- show system service on page 269
- snmp-server community on page 275
- snmp-server host on page 276
- speed (ethernet interfaces) on page 282
- speed (management interfaces) on page 283
- system firmware rollback on page 287
- system firmware update on page 288
- system service update on page 296
- traceroute on page 301
- traffic-type on page 303

For more information about this release, see the *Extreme 9920 Software Release Notes, 21.1.1.0*.



Using the NPB Application CLI

The command line provides a powerful means for configuring, managing, and monitoring packet traffic through the Extreme 9920 device.

The following topics describe accessing and using the NPB application command-line interface (CLI), including syntax, command completion, shortcuts, and other helpful subjects.

User Accounts

A user account specifies that user's level of access to the device CLI.

The NPB application uses role-based access control (RBAC) as the authorization mechanism. A *role* is a container for rules, which specify which commands can be executed and with which permissions. When you create a user account you need to specify a role for that account. In general, *user* (as opposed to *user-level*) refers to any account to which an admin or user role can be assigned.

For more information about user accounts and roles, see *Extreme 9920 Software Security Configuration Guide, 21.1.1.0*.

Default Account Credentials

The NPB application ships with two default user accounts.

When you install the NPB application on Extreme 9920, two default user accounts are provided—**`admin`** and **`user`**—with the following case-sensitive default passwords:

- admin account password: **`rocks`**
- user account password: **`password`**

As a best practice, log on as the administrator and change the default passwords immediately after the NPB application is installed.

Predefined Accounts and Roles

The NPB application ships with two predefined accounts—**admin** and **user**. The maximum number of user accounts that you can configure is 64, including the predefined accounts.

- **admin**—Accounts with admin role access can execute all commands supported on the device.
- **user**—Accounts with user-level access have read-only permissions. User-level accounts can run the following operational CLI commands.

Table 4: User-level operational commands

Command	Action
dir	List flash files
end	End current mode and change to enable mode
exit	Exit current mode and revert to previous mode
list	Print command list
ping	Ping
quit	Exit current mode and revert to previous mode
show	Show values
terminal	Set terminal timeout parameters
traceroute	Run traceroute
The **ping** and **traceroute** commands are also supported on gNOI and accept both IPv4 and IPv6 addresses.	

Accessing the CLI

After an IP address is assigned to the device, you can access the CLI through a serial console connection to the Ethernet management port or SSH session using the device management IP address.

For information on a session connection, see the *Extreme 9920 Software Configuration Guide, 21.1.1.0*.

The procedure to access the CLI is same for both console interface and SSH session. The following example shows the admin role logging into the device:

```
device login: admin
Password:**********
device#
```

Note

Multiple users can open sessions on the device and issue commands. The device supports a maximum of 32 CLI sessions.

Command Modes

The the application CLI uses an industry-standard hierarchical shell familiar to networking administrators.

Exec Mode

Log into the device to access Exec mode. Exec mode supports all clear, show, and debug commands. In addition, some configuration commands that do not make changes to the system configuration are also supported. The following example shows the command prompt in Exec mode:

```
device#
```

Use the `disable`, `exit`, or `logout` command to exit Exec mode.

Config Mode

Config mode supports commands that change the device configuration. All NPB application configurations are auto-persistent. Config mode provides access to sub-configuration modes for individual interfaces and other configuration areas. The following example shows how to access the Config mode:

```
device# configure terminal
device(config)#
```

do Command

You can use the **do** command as a shortcut to save time when you are working in any configuration mode and you want to run a command in Exec mode.

For example, if you are configuring an Ethernet interface and you want to run an Exec mode command, such as the **dir** command, you first have to exit the Interface configuration mode. By using the **do** command with the **dir** command, you can ignore the need to change configuration modes, as shown in the following example:

```
device(config-if-eth-1/2)# do dir
total 32
drwxrwxr-x 3 21487 1011  4096 Mar 26 17:58 .
drwxrwxr-x 3 21487 1011  4096 Mar 13 06:45 ..
-rw-r--r-- 1 root  sys    495 Mar 16 15:41 defaultconfig.cluster
-rw-r--r-- 1 root  sys    210 Mar 16 15:41 defaultconfig.standalone
drwxrwxr-x 5 root  sys   4096 Mar 26 17:57 flex-cli
-rw-r--r-- 1 root  root 11093 Mar 26 18:04 startup-config

16908197888 bytes total (8438681600  bytes free)
```

CLI Commands and Command Syntax

You can display commands and syntax information in any mode and from any point in the command hierarchy.

Enter a question mark (`?`) in any command mode to display the list of commands available in that mode.

```
device# ?
```

To display a list of commands that start with the same characters, type the characters followed by a question mark (**?**).

```
device# e?
Possible completions:
  event-handler    Event Handler Commands
  execute-script   Run user-level BASH scripts
  exit             Exit the management session
```

To display the keywords and arguments associated with a command, enter the keyword followed by a space a then a question mark (`?`).

```
device# terminal ?
Possible completions:
 length    Sets Terminal Length for this session
 monitor   Enables terminal monitoring for this session
 no        Sets Terminal Length for this session to default :24.
 timeout   Sets the interval that the EXEC command interpreter wait for user input.
```

If the question mark (`?`) is typed within an incomplete keyword, but the keyword matches several keywords, the CLI displays help for all the matching keywords.

```
device# show d?
Possible completions:
  debug      Display the udld debug configuration
  defaults   Display default configuration
  dot1x      Show dot1x
```

If the device does not recognize a command after you press **Enter**, an error message displays.

```
device# hookup
                ^
syntax error: unknown argument.
```

If you enter an incomplete command, an error message displays.

```
device# show
                    ^
syntax error: unknown argument.
```

Completing CLI commands

To complete the spelling of commands or keywords automatically, begin typing the command or keyword and then press **Tab**. For example, at the CLI command prompt, type `te` and press **Tab**:

```
device# te
```

The CLI displays the following command.

```
device# terminal
```

If there is more than one command or keyword associated with the characters typed, the CLI displays all choices. For example, at the CLI command prompt, type `show l` and press **Tab**.

```
device# show l
```

CLI keyboard shortcuts

The following table lists CLI keyboard shortcuts.

Table 5: CLI keyboard shortcuts

Keystroke	Description
Ctrl+A	Moves the cursor to the beginning of the command line.
Ctrl+B (or the left arrow key)	Moves the cursor back one character.
Ctrl+C	Escapes and terminates command prompts and ongoing tasks (such as lengthy displays), and displays a fresh command prompt.
Ctrl+E	Moves the cursor to the end of the command line.
Ctrl+F (or the right arrow key)	Moves the cursor forward one character.
Ctrl+N (or the down arrow key)	Displays commands in the history buffer with the most recent command displayed last.
Ctrl+P (or the up arrow key)	Displays commands in the history buffer with the most recent command displayed first.
Ctrl+U	Deletes all characters from the cursor to the beginning of the command line.
Ctrl+W	Deletes the last word you typed.
Ctrl+Z	Returns to privileged EXEC mode. Using Ctrl+Z in privileged EXEC mode executes partial commands.
Esc B	Moves the cursor back one word.
Esc F	Moves the cursor forward one word.

CLI Command Output Modifiers

You can filter the output of the CLI **`show`** commands by using the output modifiers described below.

Table 6: CLI command output modifiers

Output Modifier	Description
`append`	Appends the output to a file.
`redirect` *`filename`*	Redirects the command output to the specified file.
`include` *`string`* or *`expression`*	Displays the command output that includes the specified expression.
`exclude` *`string`* or *`expression`*	Displays the command output that excludes the specified expression.
`begin` *`string`* or *`expression`*	Displays the command output that begins with the specified expression.

Table 6: CLI command output modifiers (continued)

Output Modifier	Description
last	Displays only the last few lines of the command output.
tee *filename*	Redirects the command output to the specified file. Notice that this modifier also displays the command output.
until *string*	Ends the output when the output text matches the string.
count	Counts the number of lines in the output.
linnum	Enumerates the lines in the output.
more	Paginates the output.
nomore	Suppresses the pagination of the output.
FLASH	Redirects the output to flash memory.

Unsupported Input Characters

If unsupported input characters are used for user-defined objects, an error message is displayed.

However, characters dependent on combinations of the **AltGr** key and another key are not supported.

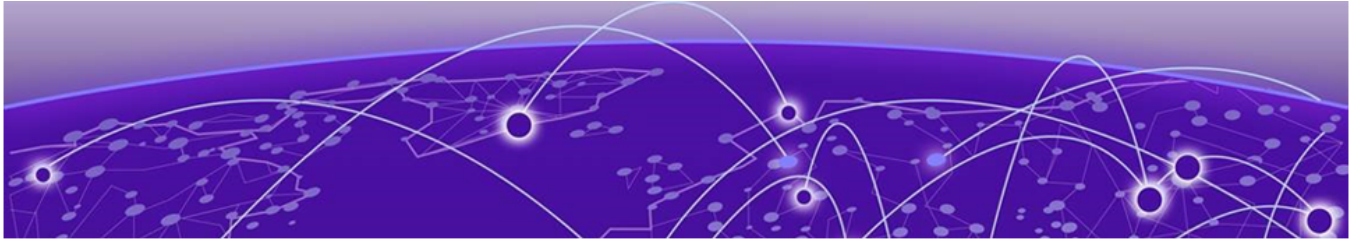
Note
The **AltGr** key is the **Alt** key to the right of the space bar.

Debug and System Diagnostic Commands

Debug and system diagnostic commands, such as "debug" and "show system internal" commands, are developed and intended for specialized troubleshooting.

Extreme Networks recommends that you work closely with Extreme technical support in executing such commands and interpreting their results.

Note
Not all diagnostic commands are documented.



NPB Application Commands

The following topics describe NPB application commands and include details about parameters and usage.

aaa accounting

Enables or disables sending accounting logs for commands or login information to the TACACS+ server.

Syntax

aaa accounting { **commands** | **exec** | **all** } **default start-stop** { **tacacs+** | **none** }

no aaa accounting commands default start-stop tacacs+

Command Default

Accounting is disabled.

Parameters

accounting

Configures command accounting.

commands

Enables or disables command accounting.

exec

Enables or disables login accounting.

all

Enables or disables command and login accounting.

default

Enables sending of logged information to the default server.

start-stop

Enables the sending of a "start" accounting notice at the beginning of a process and a "stop" accounting notice at the end of a process. The "start" accounting record is sent in the background. The requested user process begins regardless of whether the "start" accounting notice was received by the accounting server.

tacacs+

Configures TACACS+ server for accounting.

none

Disables accounting services.

Modes

Config mode

Usage Guidelines

This command is allowed in Config mode only.

This command is available only to users with admin role.

You can modify or enable only one accounting configuration.

Examples

The following example configures command accounting, with the CLI information being forwarded to the TACACS+ server.

```
device# configure terminal
device(config)# aaa accounting all default start-stop tacacs+

device# show running-config aaa
aaa authentication login tacacs+ local-auth-fallback
aaa accounting commands default start-stop tacacs+
aaa accounting exec default start-stop tacacs+
```

The following example disables login accounting; command accounting (when also configured) remains active.

```
device(config)# no aaa accounting all default start-stop
```

aaa authentication

Configures the Authentication, Accounting, and Authorization (AAA) login sequence with TACACS+ primary and local auth secondary.

Syntax

aaa authentication login tacacs+ local-auth-fallback

no aaa authentication login tacacs+ local-authfallback

Command Default

Authenticates with the local database if this command is not run.

Parameters

login

Specifies the order of login authentication sources for login

tacacs+

Specifies the use of TACACS+ servers

local-auth-fallback

Specifies the use of a local switch database if authentication methods are not active or authentication fails.

Modes

Config mode

Usage Guidelines

This command is allowed only in configuration mode.

This command is available only to users with admin role.

Examples

The following example configures the authentication sequence to first use a TACACS+ server, then to use the fallback database if TACACS+ authentication is not active or fails.

```
device# configure terminal
device(config)# aaa authentication login tacacs+ local-auth-fallback
```

The following example removes the authentication sequence from the TACACS+ server and defaults to local database authentication.

```
device(config)# no aaa authentication login tacacs+ local-auth-fallback
```

acl-config

Changes the CLI mode to `acl-config` to configure functions common to all types of ACL.

Syntax

`acl-config`

Parameters

`acl-config`

Specifies ACL common configurations.

Modes

Config mode

Examples

The following example changes the CLI mode to `acl-config`.

```
device(config)# acl-config
device(config-acl-config)#
```

address

Configures the IP address of the Remote syslog server.

Syntax

address [*A.B.C.D* | *A:B::C:D*]

Parameters

A.B.C.D

Specifies the IPv4 address.

A:B::C:D

Specifies the IPv6 address.

Modes

Host configuration mode

Usage Guidelines

Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

Examples

The following example shows how to configure the IP address of the Remote syslog server.

```
device(config-logging-host-H1)# address 1.1.1.1
Warning: Existing Host configuration changed
device(config-logging-host-h1)# address 0.0.0.0
Error(-1): Invalid parameter!

device(config-logging-host-h1)# address 230.1.1.1
Error(-1): Invalid parameter!

device(config-logging-host-h1)# address abc
% Unknown command.

device(config-logging-host-h1)# address 192.168
Error(-1): Invalid parameter!

device(config-logging-host-h1)# address 1.1.1.1
Host already configured!
```

banner login

Configures the login banner message for displaying before the authentication prompt.

Syntax

banner login *STRING*

no banner login

Parameters

login *STRING*

Specifies the login message string. Valid range is 1-1024.

Modes

Config mode

Examples

The following example configures the banner login message.

```
device(config)# banner login “This is sample login message”

device# show running-config banner
banner login "This is sample login message"
```

banner motd

Configures the message of the day (MOTD) banner for displaying after authenticating the user.

Syntax

banner motd *STRING*

no banner motd

Parameters

motd *STRING*

Specifies the motd message string. Valid range is 1-1024.

Modes

Config mode

Examples

The following example configures the motd banner message.

```
device(config)# banner motd “This is sample motd message”

device# show running-config banner
banner login "This is sample motd message"
```

base command | append

Appends output of the base command to a text file.

Syntax

base command | **append** *FILENAME*

Parameters

base command

Specifies the base command for filtering the output.

append *FILENAME*

Specifies the file name for filtering the output of the base command. File format is `flash://cli/<name>`.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example appends the base command output to a flash file.

```
device# show running-config append flash://cli/file1
```

base command | begin

Starts displaying the base command output for the matching token or expression.

Syntax

base command | **begin** *REGEX*

Parameters

begin *REGEX*

Specifies the token or expression to match to start displaying the base command output.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example starts displaying the output of the **show running-config** command after matching the expression, `interface ethernet 0/18`.

```
device# show running-config | begin "interface ethernet 0/18"

interface ethernet 0/18
  shutdown
interface ethernet 0/19
  shutdown
interface management 0
  ip address dhcp
  no ipv6 address dhcp
  no shutdown
```

base command | count

Counts the number of lines in the output of the base command.

Syntax

base command | **count**

Parameters

base command

Specifies the base command for filtering the output.

count

Specifies the number of lines in the output of the base command.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example counts the number of lines in the base command output.

```
device# show running-config | count
Count: 50 lines
```

base command | exclude

Hides the base command output lines that match the specific token or expression.

Syntax

base command | **exclude** *REGEX*

Parameters

base command

Specifies the base command for filtering the output.

exclude *REGEX*

Specifies the token or expression to match for hiding the base command output lines.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example hides the base command output lines that match the expression.

```
device# show running-config | exclude "ethernet 0" | exclude shutdown

ntp enable
ntp server 1.in.pool.ntp.org
ntp server 2.2.2.2
ntp server 2.1.1.1
ntp server 3.2.2.2
ntp server 3.2.2.1
interface management 0
  ip address dhcp
  no ipv6 address dhcp
```

base command | include

Displays only the base command output lines that match the specific token or expression.

Syntax

base command | **include** *REGEX*

Parameters

base command

Specifies the base command for filtering the output.

include *REGEX*

Specifies the token or expression to match for displaying the base command output lines.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example includes the base command output lines that match the specific expression.

```
device# show running-config | include interface | exclude "ethernet 0/"

interface management 0
```

base command | last

Displays only the specified number of last lines from the base command output.

Syntax

base command | **last** *NUMBER*

Parameters

base command

Specifies the base command for filtering the output.

last *NUMBER*

Specifies the number of last lines from the base command output for displaying.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example displays last four lines of the base command output.

```
device# ngnpb# show running-config | last 4

interface management 0
  ip address dhcp
  no ipv6 address dhcp
  no shutdown
```

base command | linenum

Numbers the base command output lines.

Syntax

base command | **linenum**

Parameters

base command

Specifies the base command for filtering the output.

linenum

Numbers the base command output lines.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example numbers the base command output lines.

```
device# show running-config | linnum | last 4

47:interface management 0
48:  ip address dhcp
49:  no ipv6 address dhcp
50:  no shutdown
```

base command | more

Paginates the base command output.

Syntax

base command | **more**

Parameters

base command

Specifies the base command for filtering the output.

more

Paginates the base command output.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example paginates the base command output.

```
device# show running-config | more

ntp enable
ntp server 3.2.2.1
ntp server 1.in.pool.ntp.org
ntp server 2.2.2.2
ntp server 2.1.1.1
ntp server 3.2.2.2
--More--
```

base command | nomore

Suppresses default pagination for the base command output.

Syntax

base command | **nomore**

Parameters

base command

Specifies the base command for filtering the output.

nomore

Suppresses default pagination for the base command output.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example suppresses default pagination for the base command output.

```
device# show running-config | nomore

ntp enable
ntp server 3.2.2.1
ntp server 1.in.pool.ntp.org
ntp server 2.2.2.2
ntp server 2.1.1.1
ntp server 3.2.2.2
interface ethernet 0/1
  shutdown
interface ethernet 0/2
  shutdown
interface ethernet 0/3
  shutdown
interface ethernet 0/4
  shutdown
interface ethernet 0/5
  shutdown
interface ethernet 0/6
  shutdown  .........
```

base command | save

Saves the base command output to a text file.

Syntax

base command | **save** *FILENAME*

Parameters

base command

Specifies the base command for filtering the output.

exclude *FILENAME*

Specifies the file name for writing the output of the base command. File format is `flash://cli/<name>`.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example writes the base command output to the specified file.

```
device# show running-config | save flash://cli/file2
```

base command | until

Stops displaying the base command output until a match is found for the specific token or expression.

Syntax

base command | **until** *REGEX*

Parameters

base command

Specifies the base command for filtering the output.

until *REGEX*

Specifies the token or expression to match from the base command output.

Modes

Filter mode

Usage Guidelines

The "|" symbol in this command does not act as a separator, but instead provides access to the filter command.

Examples

The following example stops displaying the base command output until a match is found.

```
device# show running-config | until "interface ethernet 0/2"

ntp enable
ntp server 2.1.1.1
ntp server 3.2.2.2
ntp server 3.2.2.1
ntp server 1.in.pool.ntp.org
ntp server 2.2.2.2
interface ethernet 0/1
  shutdown
interface ethernet 0/2
```

breakout

Configures breakout mode on the supported connectors.

Syntax

breakout [4x10g | 4x25g]

no breakout

Parameters

4x10g

Configures the 4 x 10 G breakout mode.

4x25g

Configures the 4 x 25 G breakout mode.

Modes

Connector config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported only on even numbered ports. Example: 1/2

The port must not be part of a port channel.

The port must be in shutdown state.

The current and the previous port are deleted and four new ports with the breakout speed are created.

Table 7: Error messages

Message	Reason
`Port slot/port does not support breakout config. Only even numbered ports are supported.`	Only even numbered ports are supported. Reconfigure the port.
`Port is already in breakout mode.`	Verify that the specified port is the one that was intended.
`Port is not in breakout mode.`	Port must be in breakout mode to successfully remove it from breakout mode.
`Operation not allowed on connector slot/port. Interfaces slot/oddNumPort, slot/port can't be in port channel group.`	Port should not be part of a port-channel group.

Table 7: Error messages (continued)

Message	Reason
`Operation not allowed on connector slot/port. Interfaces slot/port, slot/port should be in shutdown state.`	Port must be in a shutdown state to configure **`breakout`**.
`Media (part number %v) may not be breakout compatible.`	The inserted media is not breakout compatible.
`WARN: Enabling breakout on an interface is a disruptive action and will result in ports 1/1 and 1/2 to be unavailable for use.`	The command is executing normally and the port will not be available for 40 Gbps and 100 Gbps use.

Examples

The following examples shows configuration of a breakout and the confirmation that it was successful.

```
device(config-connector-1/2)# breakout 4x10g
WARN: Enabling breakout on an interface is a disruptive action and will result in ports
1/1 and 1/2 to be unavailable for use.

device(config-connector-1/2)# breakout 4x10g
Port is already in breakout mode
```

capture

Configures onboard packet capture on the interface.

Syntax

capture packet interface ethernet *IFNAME* { **direction** [*both* | *rx* | *tx*] [**packet-count** *number*] }

capture start

capture stop

no capture packet interface ethernet *IFNAME*

Parameters

interface ethernet *IFNAME*

Specifies the front panel port in slot/port format.

direction

Specifies the type of packet capture.

both

Specifies both ingress and egress packet capture.

rx

Specifies ingress packet capture.

tx

Specifies egress packet capture.

packet-count *number*

Specifies the number of packets to be captured on the interface. Valid packet capture values range from 1 to 8000.

start

Starts packet capture.

stop

Stops packet capture.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Only one mirror session is allowed per port.

Maximum 10 mirror sessions per device are allowed.

Packet capture is not allowed if maximum PCAP files are already created.

When packet-count parameter is specified, the packet capture automatically stops on the interface after the specified number of packets are captured.

The maximum number of existing PCAP files cannot exceed 25.

After packet capture is configured on the required ports, use the `capture start` command to start capturing packets in the active running PCAP file.

The `capture stop` command stops writing the packet to PCAP file and moves the active file to next available inactive PCAP file.

Start and stop options do not clear hardware entries.

Onboard packet capture is not persistent across reboot.

Table 8: Error messages

Message	Reason
`Max Session Per Port Exceeded`	Only one port can be mentioned in the command.
`Max Session Exceeded`	Only one mirror session is allowed on one port. A maximum of 10 mirror sessions is allowed on a device.
`Interface does not exist`	Interface must be configured before packet capture can be configured.
`Maximum limit of pcap files already created. Remove old pcap files to continue`	The number of existing PCAP files cannot exceed 25.
`Interface range is not supported`	Range or list of ports are not supported.

Examples

The following example configures both ingress and egress packet capture, up to 100, on ethernet interface 1/1.

```
device# capture packet interface ethernet 1/1 direction both packet-count 100
```

The following example removes packet capture configuration on the specified ethernet slot/port.

```
device# no capture packet interface ethernet 1/1
```

The following example starts, verifies, and stops packet capture.

```
device# capture start
device# show capture packet config
capture start
device# capture stop
```

channel-group

Configures a physical interface to an EtherChannel.

Syntax

channel-group *number* **mode on**

no channel-group

Parameters

number

Number of the channel group. Valid range is from 1 to 255.

mode

Specifies the EtherChannel mode of the interface.

on

This is the default. Specifies that all EtherChannels that are not running LACP remain in this mode.

Modes

Interface config mode

Usage Guidelines

An EtherChannel in the `on` channel mode is a pure EtherChannel (static-lag) and can aggregate a maximum of 64 ports.

Only one port can be mapped with one channel-group.

This command requires that a group is already present.

MTU must not be configured.

The speed of member-ports should be same as that of the current port.

When the last physical interface is deleted from an EtherChannel, the EtherChannel is not removed. To remove the interface from the channel group, use the **no interface port-channel** command.

Message	Reason
`Error: Invalid configuration, port-channel 2 not present.`	Trying to configure the channel-group without creating the port-channel
`Error: already mapped to port-channel 1.`	Trying to configure the channel-group which is already mapped to the port-channel

Message	Reason
`Error: MTU needs to be unconfigured before adding an interface to port-channel.`	Trying to add interfaces to the port-channel without removing MTU configuration
`Error: speed configuration not allowed when interface is already member of a port-channel.`	Trying to configure speed when the interface is already a port-channel member

Examples

The following example configures the physical interface from the Ether Channel.

```
device# configure terminal
device(config)# interface ethernet 1/1
device(config-if-eth-1/1)# channel-group 1 mode on
device(config-if-eth-1/1)# no shutdown
device(config-if-eth-1/1)# end

device# show running-configuration
interface ethernet 1/1
channel-group 1 mode on
no shutdown
```

clear counters access-list

Clears counters of the specified or all configured MAC, IPv4, and IPv6 access lists.

Syntax

clear counters access-list all

clear counters ip access-list [*ACL_NAME* | **all**]

clear counters ipv6 access-list [*ACL_NAME* | **all**]

clear counters mac access-list [*ACL_NAME* | **all**]

Parameters

ACL_NAME

Specifies the name of the access-list.

all

Specifies all configured access-lists.

ip

Specifies the IPv4 access-list.

ipv6

Specifies the IPv6 access-list.

mac

Specifies the MAC access-list.

Modes

Exec mode

Table 9: Error messages

Message	Reason
`Error: messaging failure(Init) while clearing acl counters`	Internal error
`Error: messaging failure(Clear) while clearing acl counters`	Internal error

Examples

The following examples clear counters for access-lists.

```
device# clear counter ip access-list all
device# clear counter ip access-list v4-acl
device# clear counter ipv6 access-list v6-acl
device# clear counter mac access-list l2-acl
```

The following example displays all MAC access-lists and their counters.

```
device# show mac access-list all

mac access-list L2
  seq 10 permit 02:02:02:02:02:02 02:02:02:02:02:02 02:02:02:02:02:03 02:02:02:02:02:03
( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
```

The following example displays all ip access-lists and their counters.

```
device# show ip access-list all
ip access-list grp_a_deny_1
  seq 10 deny ip 2.2.4.0 255.255.255.0 1.1.1.3 255.255.255.255 ( 5000000 Packets,
1940000000 Bytes, 0 Packets/sec, 0 Bits/sec )
  seq 20 deny ip 2.2.5.0 255.255.255.0 1.1.1.4 255.255.255.255 ( 5000000 Packets,
1940000000 Bytes, 0 Packets/sec, 0 Bits/sec )
ip access-list grp_a_deny_2
  seq 10 deny ip 2.2.6.0 255.255.255.0 1.1.1.5 255.255.255.255 ( 5000000 Packets,
1940000000 Bytes, 0 Packets/sec, 0 Bits/sec )
  seq 20 deny ip 2.2.7.0 255.255.255.0 1.1.1.6 255.255.255.255 ( 5000000 Packets,
1940000000 Bytes, 0 Packets/sec, 0 Bits/sec )
```

The following example verifies that all access-list counters were cleared.

```
device# show ip access-list all
ip access-list grp_a_deny_0
  seq 10 deny ip 2.2.2.0 255.255.255.0 1.1.1.1 255.255.255.255 ( 0 Packets, 0 Bytes, 0
Packets/sec, 0 Bits/sec )
  seq 20 deny ip 2.2.3.0 255.255.255.0 1.1.1.2 255.255.255.255 ( 0 Packets, 0 Bytes, 0
Packets/sec, 0 Bits/sec )
ip access-list grp_a_deny_1
  seq 10 deny ip 2.2.4.0 255.255.255.0 1.1.1.3 255.255.255.255 ( 0 Packets, 0 Bytes, 0
Packets/sec, 0 Bits/sec )
  seq 20 deny ip 2.2.5.0 255.255.255.0 1.1.1.4 255.255.255.255 ( 0 Packets, 0 Bytes, 0
Packets/sec, 0 Bits/sec )
```

clear counters egress

Clears all egress counters.

Syntax

clear counters egress all

Parameters

all

Specifies deletion of all counters for configured egresses.

Modes

Exec mode

Usage Guidelines

This command is ignored silently if an entry is not present.

Examples

The following example clears counters for all egresses.

```
device# clear counters egress all
```

clear counters egress-group

Clears counters for all egress-groups.

Syntax

clear counters egress-group all

Parameters

all

Specifies deletion of counters for all egress groups.

Modes

Exec mode

Usage Guidelines

This command is ignored silently if an entry is not present.

Examples

The following example clears counters for all egress groups.

```
device# clear counters egress-group all
```

clear counters encap

Clears current statistics available on encap.

Syntax

clear counters encap { *name* | **all** }

Parameters

name

Specifies the encap counter name.

all

Specifies all encap counters.

Modes

Encap config mode

Usage Guidelines

Valid encap name must be provided.

Table 10: Error messages

Message	Reason
`Error: encap <encap-name> not found`	Valid encap name must be provided.

Examples

The following example clears encap_1 counters.

```
device(config-encap)# clear counters encap encap_1

Show running:
device# show encap counters encap_1

Tunnel Encapsulation Statistics(GRE)
    Egress port : ethernet 1/2
      RX Frames : 0
       RX Bytes : 0
```

The following example clears all encap counters.

```
device# clear counters encap all
```

The following example shows encap counters

```
device# show counters encap encap-1

Tunnel Encapsulation Statistics(GRE)
    Egress port : ethernet 10/2
```

```
      RX Frames : 0
       RX Bytes : 0
mac access-list L2
```

clear counters ingress-group

Clears the specific or all ingress-group counters information.

Syntax

clear counters ingress-group { *name* | **all** }

Parameters

name

Specifies the name of the ingress-group counters.

all

Specifies all ingress-group counters.

Modes

Exec mode

Usage Guidelines

If the ingress group has only the associated ports, the **clear ingress-group counters** command does not clear statistics as it fetches the interface statistics. Interface clear clears the statistics for the ingress group as well.

Examples

The following example clears ingress-group counters.

```
device# clear counters ingress-group ig1

device# clear counters ingress-group all
```

The following example displays all ingress-group counters information.

```
# show counters ingress-group all
Number of ingress-groups: 2
Ingress-group Packet Statistics (Vxlan Tunnel)
        Name : IgVxlanVni100
   RX Frames : 0
    RX Bytes : 0
```

The following example clears counters on all ingress groups and verifies it with the show command.

```
device# clear counters ingress-group all

device# show counters ingress-group all
Number of ingress-groups: 2
        Name : ig_01
No ingress-group stats found

        Name : ig_02
No ingress-group stats found
```

clear counters interface

Clears counters of the specified interface.

Syntax

clear counters interface ethernet [**IFNAME** | **all**]

clear counters interface management *0*

clear counters interface port-channel [*PORANGE* | *all*]

Parameters

ethernet

Specifies the counters of ethernet interface.

IFNAME

Specifies the ethernet interface name in slot/port format. Example: 1/1 Range: 1/1-3, 5, 7-9.

all

Clears all ethernet interface statistics.

Management *0*

Specifies the management interface.

port-channel

PORANGE

Specifies the channel number or range of channel numbers. Valid range is 1 through 255.

all

Specifies all port-channel interfaces.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Table 11: Error messages

Message	Reason
`Error: Command supported on active interfaces only`	The specified interface must be active.

Examples

The following example clears counters of the ethernet interface on slot/port 1/1.

```
device# clear counters interface ethernet 1/1
```

The following example clears counters on management interface 0.

```
device# clear counters interface management 0
```

The following example clears port-channel 1 counters.

```
device# clear counters interface port-channel 1

device# clear counters interface port-channel 1-3,5,7-9
```

The following example clears counters for all ethernet interfaces.

```
device# clear counters interface ethernet all
```

The following examples show error messages that occur when the entry is out-of-range, or the wrong format.

```
device(config)# clear counters interface port-channel 256
Error: port-channel wrong format or range. Valid range is 1-255:
Example: 1   Range Example: 1-3,5,7-9

device(config)# clear counters interface port-channel adada
Error: port-channel wrong format or range. Valid range is 1-255:
Example: 1   Range Example: 1-3,5,7-9

When PORANGE is more than 255 char:
Error: Port-channel range too long, max 255 char supported
```

clear counters listener-policy

Clears the counters of the specified or all configured listener-policies.

Syntax

clear counters listener-policy [*POLICY_NAME* | **all**]

clear counters ip access-list [*ACL_NAME* | **all**] **listener-policy** [*POLICY_NAME* | **all**]

clear counters ipv6 access-list [*ACL_NAME* | **all**] **listener-policy** [*POLICY_NAME* | **all**]

clear counters mac access-list [*ACL_NAME* | **all**] **listener-policy** [*POLICY_NAME* | **all**]

Parameters

ACL_NAME

Specifies the name of the access-list.

POLICY_NAME

Specifies the name of the listener policy.

all

Specifies counters information for all access-lists or listener policies.

ip

Specifies the IPv4 access-list.

ipv6

Specifies the IPv6 access-list.

mac

Specifies the MAC access-list.

Modes

Exec mode

Examples

The following example clears counters for listener-policies.

```
device# clear counters listener-policy lp1

device# clear counters listener-policy lp1 ipv6 access-list all

device# clear counters listener-policy lp1 mac access-list macAcl

device# clear counters mac access-list l2-acl listener-policy lp1
```

clear counters route-map

Clears the counters of the specified or all configured route-maps.

Syntax

clear counters route-map [*ROUTE_MAP_NAME* | **all**]

clear counters ip access-list [*ACL_NAME* | **all**] **route-map** [*ROUTE_MAP_NAME* | **all**]

clear counters ipv6 access-list [*ACL_NAME* | **all**] **route-map** [*ROUTE_MAP_NAME* | **all**]

clear counters mac access-list [*ACL_NAME* | **all**] **route-map** [*ROUTE_MAP_NAME* | **all**]

Parameters

ACL_NAME

Specifies the name of the access-list.

ROUTE_MAP_NAME

Specifies the name of the route-map.

all

Specifies counters information for all access-lists or route-maps.

ip

Specifies the IPv4 access-list.

ipv6

Specifies the IPv6 access-list.

mac

Specifies the MAC access-list.

Modes

Exec mode

Examples

The following examples clears counters for route-maps.

```
device# clear counters route-map all

device# clear counters route-map all ip access-list ipv4Acl

device# clear counters ip access-list v4-acl route-map r1

device# clear counters ipv6 access-list v4-acl route-map all
```

clear counters transport-tunnel

Clears the specified or all counters for transport tunnels.

Syntax

clear counters transport-tunnel [**all** | **name**]

Parameters

all

Specifies all transport-tunnels.

name

Specifies the name of the transport-tunnel.

Modes

Exec mode

Usage Guidelines

You must have the admin role to run this command.

Examples

The following example clears counters for all transport tunnels.

```
device# clear counters transport-tunnel all
```

clock set

Sets the clock date and time.

Syntax

clock set *date - time*

Parameters

set *date - time*

Sets the clock date and time.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example configures clock date and time.

```
device# clock set
TIME dateTime (CCYY-MM-DDTHH:MM:SS)

device# clock set 23423423-23-21T23:00:00
Failed to parse time specification: 23423423-23-21 23:00:00
```

clock timezone

Configures the system timezone.

Syntax

clock timezone *region / city*

no clock timezone *region / city*

Parameters

timezone *region / city*

Specifies the supported timezone.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

The **no clock timezone** resets the system clock to default UTC.

Examples

The following example configures timezone.

```
device(config)# clock timezone America/Los_Angeles

device(config)# clock time dog/dog
Wrong timezone value entered : dog/dog
```

connector

Configures the connector.

Syntax

connector *slot*/*port*

Parameters

slot/*port*

Specifies the name of the connector in slot/port format.

Modes

Hardware configuration mode

Examples

The following example shows how to configure the connector.

```
device(config)# hardware
device(config-hardware)# connector 1/2
device(config-connector-1/2)
```

copy default-config

Clears the running configuration.

Syntax

copy default-config running-config

Parameters

default-config

Specifies the default configuration.

running-config

Specifies the current running configuration.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

After running this command, the system reboots with the management interface configuration.

Examples

The following example replaces the running configuration with the default configuration.

```
device# copy default-config running-config

This operation will modify your running configuration.
WARN: system will be rebooted to have configuration changes to take effect!

Do you want to continue? [y/n]:
Reloading.... please wait
```

copy FILE

Copies contents of a configuration file from the specified location to the running configuration.

Syntax

copy FLASH-FILE running-config

copy REMOTE-FILE running config

copy USB-FILE running-config

Parameters

running-config

Specifies the current running configuration.

FLASH-FILE

Specifies the flash file path in format `flash://flash-type/file-name`.

REMOTE-FILE

Specifies the remote server file path in format `scp://username:password@host[:port]/filepath`.

Domain name, IPv4 address, and IPv6 address are supported as host. Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

USB-FILE

Specifies the USB file path in format `usb://file-name`.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Valid user credentials must be provided for accessing the remote server.

Input config file path must be valid.

Examples

The following examples are some valid **copy** commands.

```
device# copy flash://config-file/testfile running-config

device# scp://test:test@1.1.1.1:22/home/test/config-file/testfile running-config

device# copy usb://testfile running-config
```

The following examples show error messages.

Invalid input file:

```
device# copy flash://config-file/ running-config
Error: Input file does not exist

device# copy usb://test running-config
Error: Input file does not exist

device# copy usb://test123 running-config
Error: Input file does not exist
```

Invalid user credentials:

```
device# copy scp://test:test@10.23.17.13/home/testuser/test123 running-config
Error: Invalid user credentials.

device# copy scp://test:test@10.23.17.13/home/testuser/test123 running-config
Error: Host IP not reachable
```

USB not enabled:

```
device# copy usb://test123 running-config
Error: USB not enabled.
```

copy FILE1 FILE2

Copies a flash or USB file to a remote server and vice versa.

Syntax

copy FLASH-FILE FLASH-FILE

copy FLASH-FILE USB-FILE

copy FLASH-FILE REMOTE-FILE

copy USB-FILE FLASH-FILE

copy USB-FILE USB-FILE

copy USB-FILE REMOTE-FILE

copy REMOTE-FILE FLASH-FILE

copy REMOTE-FILE USB-FILE

Parameters

FLASH-FILE

Specifies the flash file path in format `flash://flash-type/file-name`.

REMOTE-FILE

Specifies the remote server file path in format `scp://username:password@host[:port]/filepath`.

Domain name, IPv4 address, and IPv6 address are supported as host. Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

USB-FILE

Specifies the USB file path in format `usb://file-name`.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Valid user credentials must be provided for accessing the remote server.

Input file path must be valid.

Target destination must be reachable.

Copying a file from one remote server to another remote server is not supported.

Examples

The following example copies a file from the USB to a remote location.

```
device# copy usb://testfile  scp://testuser:testpassword@1.1.1.1:22/home/testuser/test123
```

The following examples show error messages.

Invalid input file:

```
device# copy flash://config-file/test scp://test:test@1.1.1.1:/home/test/file
Error: Input file does not exist
```

USB not enabled:

```
device# copy usb://test scp://test:test@1.1.1.1:/home/test/file
Error: USB not enabled
```

Invalid target file:

```
device# copy flash://config-file/test scp://test:test@1.1.1.1:/home/test/file
Error: Target file does not exist
```

Invalid user credentials:

```
device# copy flash://config-file/test scp://test:test@1.1.1.1:/home/test/file
Error: Invalid user credentials.
```

Host IP not reachable:

```
device# copy flash://config-file/test scp://test:test@1.1.1.1:/home/test/file
Error: Host IP not reachable
```

Unsupported copy commands:

```
device# copy scp://prabhus:pr@10.23.17.131:/home/prabhus/testfile1
scp://prabhus:pr@10.23.17.131:/home/prabhus/testfile2
Error: The source and destination cannot both be remote.
```

copy running-config

Copies running configuration to the specified file to create a backup.

Syntax

copy running-config FLASH-FILE

copy running-config REMOTE-FILE

copy running-config USB-FILE

Parameters

running-config

Specifies current running configuration.

FLASH-FILE

Specifies the flash file path in format `flash://flash-type/file-name`.

REMOTE-FILE

Specifies the remote server file path in format `scp://username:password@host[:port]/filepath`.

Domain name, IPv4 address, and IPv6 address are supported as host. Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

USB-FILE

Specifies the USB file path in format `usb://file-name`.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Valid user credentials must be provided for accessing the remote server.

File path must be valid.

Target destination file must be reachable.

Examples

The following example copies running configuration to the specified file.

```
device# copy running-config flash://config-file/testfile

device# copy running-config scp://test:test@1.1.1.1:22/home/test/testfile

device# copy running-config usb://testfile
```

The following examples show error messages.

Invalid target file:

```
device# copy running-config flash://config-file
Error: Target file does not exist

device# copy running-config flash://config-filede/
Error: Target file does not exist

device# copy running-config scp://prabhus:prabhus@.1.2.2.2:/home/prabhus/test
Error: Target file does not exist
```

Host IP not reachable:

```
device# copy running-config scp://test:test@1.1.1.1:/home/test/file
Error: Host IP not reachable
```

USB not enabled:

```
device# copy running-config usb://file
Error: USB not enabled
```

Input file not specified:

```
device# copy running-config usb://
Error: Input file not specified
```

Invalid user credentials:

```
device# copy running-config scp://prabhus:prabhus@.1.2.2.2:/home/prabhus/test
Error: Invalid user credentials.
```

User role:

```
device# copy
Unknown command
```

crypto import type

Imports the authentication certificate for security configuration.

Syntax

crypto import type [**https** | **syslogca**] **protocol** [**scp** | **sftp**] **host** [*ip-address*] **certificate** [*cert-file*] **key** [*key-file*] **user** [*remote-user*] **password** [*remote-password*]

no crypto import type [**https** | **syslogca**]

Parameters

type

https

Specifies an https certificate.

syslogca

Specifies a syslogca certificate

host *ip address*

Specifies the IPv4 or IPv6 unicast address of the remote server where the file is located.

protocol

scp

Specifies use of SCP for accessing the certificate file.

sftp

Specifies use of SFTP for accessing the certificate file.

certificate *file-name*

Defines the name of the certificate file.

key *key-file*

Specifies the key file to retrieve.

username

Specifies the name of the remote user that has access to the file.

password *user-password*

Defines the password for the user name on the host server.

Note

As a best practice, do not list the password in the command line for security purposes. The user is prompted for the password.

Modes

Exec mode

Usage Guidelines

The **[no]** form of the command removes the authentication certificate.

When **[no]** form of the command is used with **https** type, a new certificate or key pair is regenerated and used with the ingress controller.

This command is available only to users with admin role.

This command is allowed only in configuration mode.

Table 12: Error messages

Message	Reason
SCP/SFTP validation failed	Importing certificate failed. Please verify certificate location and user credentials/ parameters.
Invalid credentials or server not accessible	Importing certificate failed. Please verify certificate location and user credentials/ parameters.
Certificate validation failed	Error: Importing certificate failed due to invalid file format or validation failed.
Username validation failed	Error: Importing certificates failed. Username length should be between 1 and 64 characters.
IP address validation failed	Importing certificates failed. Only a valid IPv4 or IPv6 unicast address is supported.
Cert/key file name validation failed	Importing certificates failed. File name length should be between 1 and 512

Examples

The following example imports the certificate key pair using SCP.

```
device# crypto import type https protocol scp host 10.23.17.115 certificate cert.pem key
key.pem user jsalanga password password123

Installing https certificate will result in a momentary delay and may affect active CLI
connections - please be patient.

Successfully imported file: cert.pem
Successfully imported file: key.pem
```

The following example deletes an HTTPS certificate.

```
device# no crypto import type https
Deleting https certificate!
```

crypto import-pkcs

Imports a TLS server certificate and a private key in PKCS12 format.

Syntax

crypto import-pkcs type { **https** } **protocol** [**scp** | **sftp**] **host** [*ip-address*] **file** [*cert-file*] **passphrase** [*passphrase*] **user** [*remote-user*] **password** [*password*]

no crypto import type { **https** }

Command Default

Parameters

protocol

scp

Specifies use of SCP for accessing the certificate file.

sftp

Specifies use of SFTP for accessing the certificate file.

type https

Indicates that the certificate is used for HTTPS server authentication.

host *remote-ip*

Specifies the IPv4 or IPv6 unicast address of the remote server where the file is located.

user *remote-user*

Specifies the remote user with access to the file. Supports 1-64 characters.

password *remote-user-password*

Specifies the password for the remote user.

Note
As a best practice, do not list the password in the command line for security purposes. The user is prompted for the password.

file *certificate-and-key-file*

Specifies the PKCS file to retrieve. Supports 1-512 characters.

pkcspassphrase *passphrase*

Specifies the passphrase to unlock the file. Supports 1-64 characters.

Modes

Exec mode

Usage Guidelines

Use this command to import a TLS server certificate and private key (in PKCS12 format) to device and establish a secure connection.

The **[no]** form of the command removes PKCS-format files.

The **no crypto import type https** command removes the installed PKCS-format files.

Table 13: Error messages

Message	Reason
`SCP/SFTP validation failed`	Importing certificate failed. Please verify certificate location and user credentials/ parameters.
`Invalid credentials or server not accessible`	Importing certificate failed. Please verify certificate location and user credentials/ parameters.
`Certificate validation failed`	Error: Importing certificate failed due to invalid file format or validation failed.
`Username validation failed`	Error: Importing certificates failed. Username length should be between 1 and 64 characters.
`IP address validation failed`	Importing certificates failed. Only valid IPv4 or IPv6 unicast address is supported.
`Cert/key file name validation failed`	Importing certificates failed. File name length should be between 1 and 512.

Examples

The following example specifies HTTPS authentication and SCP for the certificate file `ngnpb.pkcs`.

```
device# crypto import-pkcs protocol scp type https host 10.24.12.111 user testuser
password password file ngnpb.pkcs pkcspassphrase passphrase

HTTPS server certificate imported.

Installing https certificate will result in a momentary delay and may affect active CLI
connections - please be patient.
Successfully imported file: ngnpb.pkcs
```

The following example removes the installed PKCS-format files.

```
device# no crypto import-pkcs type https
```

Note

`no crypto import type https` also removes the installed PKCS-format files.

decap

Decapsulates the current tunnel of the received packet.

Syntax

decap

no decap

Parameters

decap

Sets decapsulation action for the route map or listener policy.

Modes

Route-map config mode

Listener-policy config mode

Usage Guidelines

Enabled in route-map mode: Decapsulates a particular encapsulation header in the packet and process remaining packet in further processing blocks. The scope of the headers is shifted to inner headers automatically.

Enabled in listener-policy mode:Terminates the incoming tunneled packets and strips the tunneled header. Payload of the tunneled packet is forwarded to the egress.

The **no decap** command removes decapsulation action from the route map.

Table 14: Error Messages

Error	Reason
`Error: New scope is enabled on` *routeMapName*`, terminate can't enable`	**new-scope** and **decap** are mutually exclusive.

Examples

The following example enables the decap function in route-map configuration mode and then uses the show command to verify the setting.

```
device# configure terminal
device(config)# route-map rmap1 10
device(config-route-map)# decap

device# show route-map all
route-map rmap1 10
forward-action deny
decap
```

```
Policy matches: 0 packets, 0 bytes, 0 Packets/secRate, 0 Bits/sec
```

The following example enables the decap function in listener-policy configuration mode.

```
device# configure terminal
device(config)# listener-policy lp1 100
device(config-listener-policy)# decap
```

The following example removes the decap funtion from route-map for `rmap1 10`.

```
device# configure terminal
device(config)# route-map rmap1 10
device(config-route-map)# no decap
```

delete

Deletes a flash or USB file.

Syntax

delete FLASH-FILE

delete USB-FILE

Parameters

FLASH-FILE

Specifies the flash file path in format `flash://flash-type/file-name`.

USB-FILE

Specifies the USB file path in format `usb://file-name`.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Valid input file path must be provided.

The active PCAP file cannot be deleted.

Examples

The following examples show how to delete configuration files.

```
device# delete flash://config-file test.txt
Warning: File flash://config-file/test.txt will be deleted (from flash).
Do you want to continue? [y/n]:

device# delete usb://test
Warning: File usb://test will be deleted (from usb).
Do you want to continue? [y/n]:
```

The following example deletes a PCAP file.

```
device# delete flash://pcap-file/test.pcap
```

The following example attempt to delete a system-created file.

```
device# delete flash://config-file ../config_file
Warning: File flash://config-file/../config_file will be deleted (from flash).
Do you want to continue? [y/n]: y
Error : while removing the file flash://config-file/../config_file
```

The following examples show the error messages.

Invalid file:

```
device# delete usb://file
Error: File not found
```

USB not enabled:

```
device# delete usb://file
Error: USB not enabled
```

deny ipv4-dest

Denies further processing to packets received with matching IPv4 address.

Syntax

deny ipv4-dest *address mask*

no deny ipv4-dest *address mask*

Parameters

deny ipv4-dest

Specifies IPv4 address to be denied. Valid ranges is 1 through 254.

address mask

Specifies the IPv4 address and mask, which must be configured in dotted decimal notation, such as 196.168.0.1.

Modes

Transport tunnel config mode

Usage Guidelines

You must have an admin role to perform this task.

If another destination IP value is already configured, it must be removed before configuring a new destination IP.

If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.

Table 15: Error messages

Message	Reason
`Error: Deny IP address mask is already configured`	Duplicate IPv4 addresses are not allowed.
`Error: Invalid destination IP address`	IPv4 address is set to 0.0.0.0 or 255.255.255.255.
`Error: Destination IP address conflicts with transport-tunnel` *`tunnelName`*	IPv4 address conflicts with another transport tunnel.
% Value 'ipv4-dest' not in range <1-254>.	Example:device(config-tranport-tunnel)# deny ipv4-dest asdf asdf

Examples

The following example configures the IPv4 address and mask to match and deny further packet processing for transport tunnel tt1 and verifies the configuration with the show command.

```
device(config)# transport-tunnel tt1
device(config-transport-tunnel)# deny ipv4-dest 192.168.4.20 255.255.255.0

device# show running-config transport-tunnel tt1
transport-tunnel tt1
  deny ipv4-dest 192.168.4.20 255.255.255.0
```

description

Sets the description for a route map, listener policy, interface, or mirror object.

Syntax

description *description-string*

no description *description-string*

Parameters

description *description-string*

Specifies the description of the route map, listener policy, interface, or mirror object.

Maximum length of the description is 64 characters. Special characters are allowed.

Modes

Route-map config mode

Listener-policy config mode

Interface config mode

Mirror config mode

Usage Guidelines

This command is available only to users with admin role.

The **no description** command removes the user configured interface description.

Table 16: Error messages

Message	Reason
`Error: Length cannot be greater than 63 chars`	Description provided was more than 63 characters.

Examples

The following examples show how to configure description for an interface.

```
device# configure terminal
device(config)# route
device(config-if-eth 1/10)# description Ethernet Interface 1/10 (100G)

device# show running interface ethernet 1/10
interface ethernet 1/10
description Ethernet Interface 1/10 (100G)
shutdown

device(config-if-eth-1/1)#description
```

```
Description12345678901234567890123456789012345678901234567890123456789012345678901234567890
Error: Length cannot be greater than 63 chars
```

The following examples show how to configure description for a listener policy.

```
device# configure terminal
device(config)# listener-policy lp-12
device(config-listener-policy)# description listener policy 12

device# show listener-policy lp-12
interface ethernet 1/10
description listener-policy 12
shutdown
```

The following examples show how to configure description for a route map.

```
device# configure terminal
device(config)# route-map rmap10
device(config-route-map)# description rmap10 configured Jan 23, 1951

device# show route-map rmap10
interface ethernet 1/10
description rmap10 configured Jan 23, 2013
no shutdown
```

The following examples show how to configure description for a mirror object.

```
device(config)# mirror mirr_1
device(config-mirror)# description mirror-1

device# show mirror mirr_1

                  Name : mirr_1
           Description : mirror-1
             Interface : none
```

destination-ipv4-addr

Configures destination IP address for encapsulation of outgoing packets.

Syntax

destination-ipv4-addr *ip-addr*

no destination-ipv4-addr *ip-addr*

Parameters

destination-ipv4-addr *ip-addr*

Specifies the IP address to be configured as destination IP.

Modes

Encap config mode

Usage Guidelines

Validations for the command are as follows:

- Valid IP addresses must be provided. The following addresses are considered invalid IP addresses:
  - Unspecified IP address (0.0.0.0)
  - Broadcast IP address (255.255.255.255)
  - Multicast IP addresses (224.x.x.x to 240.x.x.x)
- One IP address per encapsulation is allowed. Already configured IP address must be removed before configuring a new IP address.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Table 17: Error messages

Message	Reason
`Error: Invalid IP address as source address`	The following addresses are considered invalid IP addresses: • Unspecified IP address (0.0.0.0) • Broadcast IP address (255.255.255.255) • Multicast IP addresses (224.x.x.x to 240.x.x.x)
`% Value 'source-ipv4-addr' not in range <1-254>.`	IPv4 Address should be configured in dotted decimal notation in a valid subnet range. Example: 196.168.0.1 .

Examples

The following example configures the destination ip address.

```
device(config-encap-1)# destination-ipv4-addr 20.20.20.1
device(config-encap-1)#

Show running:
device# show running-configuration

encap encap-1
destination-ipv4-addr 20.20.20.1
```

destination-mac-addr

Configures destination MAC address for encapsulation of outgoing packets.

Syntax

destination-mac-addr *mac-addr*

no destination-mac-addr *mac-addr*

Parameters

destination-mac-addr *mac-addr*

Specifies the MAC address to be configured as destination MAC.

Modes

Encap config mode

Usage Guidelines

Validations for the command are as follows:

- Valid MAC address must be provided.
- One MAC address per encapsulation is allowed. Already configured MAC address must be removed before configuring a new MAC address.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Table 18: Error messages

`Error: Invalid address as Destination MAC address`	Valid address must be in colon-separated one-byte hexadecimal format. Example: XX:XX:XX:XX:XX:X . Zero padding may be needed to make one-byte data into 2-digit value.
`Error: Destination MAC address is already configured`	Destination MAC address cannot be duplicated in an encapsulation rule.
`Error: Source and Destination MAC addresses cannot be same`	Destination and source MAC address cannot be self-referential.

Examples

The following example configures the destination MAC address.

```
device(config-encap-1)# destination-mac-addr 00:01:02:03:04:05
device(config-encap-1)#

Show running:
```

```
device# show running-configuration

encap encap-1
destination-mac-addr 00:01:02:03:04:05
```

dir

Lists flash and USB directory information.

Syntax

dir [**flash://**[**chassis-ms** | **config-file** | **coredumps** | **ifmgr-ms** | **lacp-ms** | **lldp-ms** | **mgmt-cli** | **mgmt-snmp-agent** | **mgmtsvc-apigw** | **ms_images** | **pcap-file**]] | [**usb://***filename*]

Parameters

dir

Lists flash directory information.

flash://chassis-ms

Lists chassis flash file details.

flash://config-file

Lists configuration flash file details.

flash://coredumps

Lists coredump flash file details.

flash://ifmgr-ms

Lists ifmgr flash file details.

flash://lacp-ms

Lists LACP flash file details.

flash://lldp-ms

Lists LLDP flash file details.

flash://mgmt-cli

Lists mgmt-cli flash file details.

flash://mgmt-snmp-agent

Specifies list SNMP flash file details.

flash://mgmtsvc-apigw

Lists mgmtsvc-apigw flash file details.

flash://ms_images

Lists ms images flash file details.

flash://pcap-file

Lists PCAP flash file details.

usb://*filename*

Lists USB file details.

Modes

Exec mode

Examples

The following example lists flash directory information.

```
device# dir
config-file :
-rw-r--r-- 790 2021-04-22 05:50:40 comm9.conf
-rw-r--r-- 1047 2021-04-17 09:03:27 temp.conf
-rw-r--r-- 117 2021-04-12 05:54:09 temp2.conf
-rw-r--r-- 73 2021-04-13 06:14:34 temp3.conf
-rw-r--r-- 48 2021-04-13 06:18:08 temp4.conf
-rw-r--r-- 1047 2021-04-17 10:16:18 temp_1618654577.conf
-rw-r--r-- 1047 2021-04-19 11:47:49 temp_1618832866.conf
pcap-file :
-rw-r--r-- 0 2021-06-01 08:03:44 README.md
tech-support :
firmware :
ms_images :
drwxr-xr-x 4096 2021-06-01 10:06:53 agent-pdb-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 agent-pipeline-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 agent-sp-intf-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 agent-sp-nhop-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 agent-sp-sfcs-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 agent-sp-target-proxy-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 agent-svcplane-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 chassis-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 ifmgr-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 lacp-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 lldp-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmt-cdb
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmt-cli
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmt-msgbus
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmt-psdb
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmt-sdb
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmt-security
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmt-snmp-agent
drwxr-xr-x 4096 2021-06-01 10:06:53 mgmtsvc-apigw
drwxr-xr-x 4096 2021-06-01 10:06:53 onboard-pcap-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 pktmgr-ms
drwxr-xr-x 4096 2021-06-01 10:06:53 stratum-bf-angel-eyes
drwxr-xr-x 4096 2021-06-01 10:06:53 stratum-bf-tofino-model
chassis-ms :
ifmgr-ms :
lacp-ms :
lldp-ms :
mgmt-cli :
mgmtsvc-apigw :
mgmt-snmp-agent :
coredumps :
-rw------- 273702912 2021-05-28 10:08:07 core.npbcli.PID_13825.SIG_6.16 22196487

USB:
-rw-r--r-- 734 2021-05-11 04:49:58 test
-rw-r--r-- 734 2021-05-06 18:33:36 test1
-rw-r--r-- 734 2021-05-14 04:04:07 test123
-rw-r--r-- 734 2021-05-06 18:24:01 testfile

# dir usb://
USB:
```

```
-rw-r--r-- 734 2021-05-11 04:49:58 test
-rw-r--r-- 734 2021-05-06 18:33:36 test1
-rw-r--r-- 734 2021-05-14 04:04:07 test123
-rw-r--r-- 734 2021-05-06 18:24:01 testfile
```

The following examples show error messages.

USB not enabled:

```
# dir usb://
Error USB not enabled
```

Invalid file path:

```
# dir usb://test
----------------^
%Error: Unexpected token 'usb://test'.
```

egress

Creates or deletes an egress.

Syntax

egress *name*

no egress *name*

Parameters

name

Specifies the name of the configured egress object.

Supports 1-32 characters. Characters allowed are alpha-numeric, underscore and dot. Underscore is not allowed as the first character.

Modes

Config mode

Egress config mode

Usage Guidelines

A valid egress name must be provided. The reserved name, `all` cannot be used for configuration.

An egress name must be unique. An error is thrown if you try to use the same name for an egress as for an egress group.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

The **no egress name** command clears all objects of the given type.

Table 19: Error messages

Message	Reason
`Error: egress name identifier must start with an alphabetic character or an underscore.`	Egress name begins with non-alphabetic character or does not begin with an underscore.
`Error: egress name identifier cannot exceed 64 characters`	Egress name is longer than 64 characters.
`Error: egress name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Egress name contains invalid characters.

Table 19: Error messages (continued)

Message	Reason
`Error: egress name identifier must not be reserved keyword "egress".`	Egress name includes the reserved word **`egress`**
`Error: Egress and egress-group cannot use same name. An egress-group with same name already exists`	Egress name cannot be same as egress-group.

Examples

The following example creates egress-123.

```
device(config)# egress egress-100
device(config-egress)# precedence 10 interface ethernet 1/10
device(config-egress)# set encap-100
device(config-egress)# set listener-policy lp-100

device# show running-config egress
Egress egress-100
Precedence 10 interface ethernet 1/10
encap-100
lp-100
```

egress-group

Creates or removes egress-group and defines how traffic is forwarded to end devices.

Syntax

egress-group *name*

no egress-group *name*

Parameters

name

Specifies the name of the configured egress group. Supports 1-32 characters.

Characters allowed are alpha-numeric, underscore, and dot. Underscore is not allowed as the first character.

Modes

Config mode

Usage Guidelines

A maximum of 64 egress objects can be added to an egress-group.

A valid <egress-name> must be provided. `all` is a reserved name and cannot to be used for configuration.

An egress-group name must be unique. An error is thrown if you try to use the same name for an egress group as for an egress.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

The **no egress-group name** command clears all objects of the specified egress group.

Table 20: Error messages

Message	Reason
`Error: egress-group name identifier must start with an alphabetic character or an underscore.`	Egress-group name begins with non-alphabetic character or does not begin with an underscore.
`Error: egress-group name identifier cannot exceed 64 characters`	Egress-group name is longer than 64 characters.
`Error: egress-group name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Egress-group name contains invalid characters.

Table 20: Error messages (continued)

Message	Reason
`Error: egress-group name identifier must not be reserved keyword "egress-group".`	Egress-group name includes the reserved word **`egress-group`**
`Error: egress Group is bounded to route map.`	Deletion of an egress-group is not allowed if it is mapped in a route-map.
`Error: Egress-group and egress cannot use same name. An egress object with same name already exists`	Egress-group name cannot be same as egress.

Examples

The following example configures the egress group.

```
device# configure terminal
device(config)# egress-group egg123
(config-egress-group)# set egress egress-one
(config-egress-group)#

device# show running-config egress-group
egress-group egg123
egress-one
```

enable acl-counter

Enables or disables ACL counters globally.

Syntax

enable acl-counter

no enable acl-counter

Parameters

acl-counter

Enables ACL counters globally.

Modes

ACL config mode

Usage Guidelines

The **enable acl-counter** command is enabled by default.

When `acl-counter` is enabled, ACLs update their count to the extreme-policy-statistics module in the Extreme YANG tree.

The **show running configuration** command does not show the **enable acl-counter** command because it is the default value.

When **enable acl-counter** command is disabled, the `count` option in ACL rules comes into effect. The count is published to the extreme-policy-statistics module and other control plane applications for ACL rules that explicitly specify the count option.

The **enable acl-counter** command disables ACL counters globally.

Examples

The following examples shows how to configure ACL counters.

```
device(conf)# acl-config
device(conf-acl-config)# enable acl-counter
device(config)# ip access-list acl-ipv4-1
device(config-ip-acl)# seq 10 permit tcp any any count
     <- This ACL clause will display count.
device(config-ip-acl)# seq 20 deny ip any any
     <- This ACL clause also will display count.

device(conf)# acl-config
device(conf-acl-config)# no enable acl-counter
device(config)# ip access-list acl-ipv4-1
device(config-ip-acl)# seq 10 permit tcp any any count
    <- This ACL clause will display count.
```

```
device(config-ip-acl)# seq 20 deny ip any any
    <- This ACL clause will not display count.

device# show running-config acl-config

acl-config
no enable acl-counter
```

encap

Configures encapsulation parameters for the outgoing packets.

Syntax

encap *name*

no encap *name*

Parameters

encap *name*

Specifies the name of the encap object. The name is restricted to 32 characters. Characters allowed are alpha-numeric, underscore, and dot. Underscore is not allowed as the first character.

The encap name "all" is reserved and cannot be used.

Modes

Config mode

Encap config mode

Usage Guidelines

Validations for the command are as follows:

- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.
- If the [no] form of the command is executed with the configuration, all sub-mode configurations are removed along with the encap object.
- The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Table 21: Error messages

Message	Reason
`Error: encap name identifier must start with an alphabetic character or an underscore.`	Encap name begins with non-alphabetic character or does not begin with an underscore.
`Error: encap name identifier cannot exceed 64 characters`	Encap name is longer than 64 characters.

Table 21: Error messages (continued)

Message	Reason
`Error: encap name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Encap name contains invalid characters.
`Error: encap name identifier must not be reserved keyword "encap".`	Encap name includes the reserved word **encap**

Examples

The following example configures encapsulation parameters for encap-1.

```
device(config)# encap encap-1
device(config-encap-1)#

Show running:
device# show running-configuration

encap encap-1
```

encap-type

Configures encapsulation type for outgoing packets.

Syntax

encap-type gre

no encap-type gre

Parameters

gre

Sets encapsulation type to GRE.

Modes

Encap config mode

Usage Guidelines

Validations for the command are as follows:

- The `encap-type` cannot be modified or deleted when the encap is associated with the egress object.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Examples

The following examples show GRE encapsulation.

```
device# configure terminal
device(config)# encap encap-1
device(config-encap)# encap-type gre

Show running:
device# show running-config encap
encap encap-1
  encap-type gre
```

fec

Configures the FEC mode.

Syntax

fec [**fc-fec** | **rs-fec** | **auto-negotiation** | **disabled**]

Parameters

fc-fec

Configures FC-FEC in manual mode.

rs-fec

Configures RS-FEC in manual mode.

auto-negotiation

Configures FEC auto negotiation.

disabled

Disables FEC.

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported only on ports with 100G or 25G speed.

Interface cannot be a part of the port-channel.

Table 22: Error messages

Message	Reason
`Error: FEC configuration is not allowed. Disable interface before changing the FEC configuration.`	Interface must be disabled (admin shutdown) before changing FEC configuration.
`Error: Speed configuration not allowed when FEC is configured`	Port speed cannot be changed if FEC is configured

Examples

The following examples show FEC configuration.

```
device(config)# int e 4/16
device(config-if-eth-4/16)# fec fc-fec
device(config-if-eth-4/16)# fec fc-fec
Error: FEC configuration is not allowed. Disable interface before changing the FEC
```

```
configuration.

device(config)# int e 4/16
device(config-if-eth-4/16)# channel-group 111 mode on
device(config-if-eth-4/16)# fec rs-fec
Error: FEC configuration is not allowed on interface that is part of a port-channel

device(config-if-eth-4/16)# speed 40000
Error: Speed configuration not allowed when FEC is configured
device(config-if-eth-4/16)#

device# show int e 4/16
ethernet 4/16 Admin state DOWN    Operational state DOWN
 Interface index is 268435744 (0x10000120)
 MTU 0 bytes
 Hardware is Ethernet  mac address 40:88:2f:c1:02:43
Current Speed  100G
FEC Mode: RS-FEC

Statistics
 Carrier Transitions: 0
           LastClear: 0s
Input:
          Broadcast Pkts: 0
            Discard Pkts: 0
             Errors Pkts: 0
              FCS Errors: 0
              MCast Pkts: 0
                  Octets: 0
              UCast Pkts: 0
       Unknown Protocols: 0
Out:
          Broadcast Pkts: 0
            Discard Pkts: 0
             Errors Pkts: 0
              MCast Pkts: 0
                  Octets: 0
              UCast Pkts: 0
```

forward-action

Determines actions performed on packet for the current route map or listener-policy.

Syntax

forward-action { **permit** | **deny** }

Command Default

Default is **permit**.

Parameters

permit

Modifies outgoing packets according to specified matching actions. Otherwise, it tries to match the condition in the next instance of the same listener-policy. If a match is not found, the packet is forwarded without applying any actions.

deny

Skips the matching listener policy instance and drops traffic.

Modes

Route-map config mode

Listener-policy config mode

Examples

The following example allows packet forwarding action based on the ACL for the current route map.

```
device# configure terminal
device# config-route-map
device(config-route-map)# forward-action permit
```

The following example allows packet forwarding action based on the ACL for the current listener policy.

```
device# configure terminal
device(config)# listener-policy lp1 <sId>
device(config-listener-policy)# forward-action permit

device show listener-policy rt 45
  forward-action permit
```

The following example blocks packet forwarding action and drops packets for the current route map.

```
device# config-route-map
device(config-route-map)# forward-action deny
```

hardware

Enters the hardware mode.

Syntax

hardware

Parameters

hardware

Allows hardware configuration.

Modes

Config mode

Examples

The following example shows how to enter the hardware mode.

```
device(config)# hardware
device(config-hardware)#
```

ingress-group

Configures or removes ingress group for classifying the packets received on the interface.

Syntax

ingress-group *name*

no ingress-group {*name* | **all** }

Parameters

name

Specifies the name of the ingress group to be used for packets received on the interface.

all

Deletes all configured ingress groups. Use of this parameter deletes interface binding also.

Modes

Config mode

Usage Guidelines

The no form of the command deletes a specified ingress group or all configured ingress groups.

Removal of an ingress-group fails silently if the group is not present.

Table 23: Error messages

Message	Reason
`Error: ingress-group name identifier cannot exceed 64 characters`	Ingress-group name is longer then 64 characters.
`Error: ingress-group name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Ingress-group name contains invalid characters.
`Error: ingress-group name identifier must start with an alphabetic character or an underscore`	Ingress-group name begins with non-alphabetic character or does not begin with an undescore.
`Error: ingress-group name identifier must not be reserved keyword "ingress-group"`	Ingress-group name includes the reserved word `ingress-group`.

Table 23: Error messages (continued)

Message	Reason
`Error: Unbind ingress group from ports before deleting ingress group.`	Ingress-group cannot be deleted if it is bound to an interface
`Error: Unbind route map from ingress group before deleting ingress group.`	Ingress-group cannot be deleted if it is bound to a route-map.

Examples

The following example configures the ingress group and uses the set command to bind route-map rm1 to this ingress group, then verifies the configuration with the show command.

```
device# configure terminal
device(config)# ingress-group group-1
device(config-ingress-group)#  set route-map rm1

device# show running-config ingress-group
ingress-group ingress-group-1
  set route-map rm1
```

interface ethernet

Changes the configuration mode to interface or range of interfaces.

Syntax

Interface ethernet IFNAME

Parameters

IFNAME

Specifies the interface name in slot/port format. Example: 1/1.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following examples change the config mode to interface configuration mode.

```
device# configure terminal
device(config)# interface ethernet 1/10-14
device(config-if-eth 1/10-14)#

device(config)# int e 1/1-16,2/1-16
device(config-if-eth-1/1-16,2/1-16)#

device(config-hardware)# int e 1/2:1-4,2/1-16
device(config-if-eth-1/2:1-4,2/1-16)#

device(config)# int ethernet abcd
Error: IFNAME must be in slot/port format:
Example: 1/1 Range Example: 1/1-3,5,2/7-9

device(config)# int e 1/222
Error: IFNAME must be in slot/port format:
Example: 1/1 Range Example: 1/1-3,5,2/7-9
```

interface port-channel

Adds or removes a Link Aggregation Group (LAG) or port-channel from the ingress or egress group.

Syntax

interface port-channel

PORANGE

no interface port-channel *PORANGE*

Parameters

PORANGE

Specifies the channel number or range of channel numbers assigned to the Ether Channel logical interface. Valid range is 1-255.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

The packets are load balanced on member port-channel ports when a port-channel is added as part of the egress-group.

The **no interface port-channel***PORANGE* command deletes the LAG group.

Examples

The following example configures the link aggregation group.

```
device# configure terminal
device(config)# interface port-channel 1
device(config-if-po-1)# no shutdown

device# configure terminal
device(config)# interface port-channel 1-3,5,7-9
device(config-if-po-1-3,5,7-9)# no shutdown
```

Error Messages

Table 24: Error Messages

Error	Description
`Error: port-channel wrong format or range. Valid range is 1-255`	The **`port-channel`** entry is out-of-range or in the wrong format, the system displays: `9920(config)# interface port-channel 256`
`Error: Port-channel range too long, max 255 char supported`	The **`port-channel`** entry is too long.
`Error: first delete member ports from port-channel 1`	The system requires that a member port be deleted.

ip access-list

Creates an IP Access Control List (ACL). ACLs contain rules that permit or deny traffic based on packet fields belonging to the IPv4 family of protocols.

Syntax

ip access-list *name*

no ip access-list *name*

Parameters

name

Specifies the name of the IP access list. Names cannot exceed 64 characters and must start with an alphabetic character or an underscore, followed by alphabetic or numeric characters or dots. Reserved keywords cannot be used, such as `all` or `egress`

Modes

Config mode

Usage Guidelines

Command-line mode changes from `(config)` to `(config-ip-acl)` after new IP ACL is created.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Table 25: Error messages

Message	Reason
`Error: ipv4-acl name identifier cannot exceed 64 characters.`	ACL name is longer than 64 characters.
`Error: ipv4-acl name identifier must start with an alphabetic character or an underscore`	ACL name begins with non-alphabetic character or does not begin with an underscore.
`Error: ipv4-acl name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens, or dots.`	ACL name contains invalid characters.
`Error: ipv4-acl name identifier must not be reserved keyword "access-list".`	ACL name includes the reserved word `access-list`

Examples

The following example creates an ACL named P4. On successful creation the mode changes to `config-ip-acl`.

```
device# configure terminal
device(config)# ip access-list P4
device(config-ip-acl)#

device# show running-config ip access-list P4
ip access-list P4

device# show running-config ip access-list all
ip access-list P4
```

The following example deletes the ACL named P4.

```
device# configure terminal
device(config)# no ip access-list P4
```

ip address

Configures the IPv4 address for the interfaces.

Syntax

ip address *A.B.C.D/M*

ip address *dhcp*

no ip address *A.B.C.D/M*

no ip address *dhcp*

Parameters

A.B.C.D/M

Specifies the IPv4 unicast address. Only valid IPv4 unicast address is supported.

dhcp

Specifies the DHCP IPv4 address.

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported on management interfaces.

The **no ip address** removes the IP address configured on the interface.

The **no ip address dhcp** removes the IP address dhcp configured on the interface.

Examples

The following example configures the ipv4 address.

```
device# configure terminal
device(config)# interface management 0
device(config-if-mgmt-0)# ip address 192.168.122.10/24

device# show running interface management 0
interface management 0
no ip address dhcp
ip address 192.168.122.10/24
shutdown

device(config-if-mgmt-0)# ip address 0.0.0.0/24
Error: Not a unicast IP address
device(config-if-mgmt-0)# ip address 255.255.255.255/24
Error: Not a unicast IP address
```

```
device(config-if-mgmt-0)# ip address 234.0.0.1/24
Error: Not a unicast IP address
```

The following example configures the DHCP ipv4 address.

```
device# configure terminal
device(config)# interface management 0
device(config-if-mgmt-0)# ip address dhcp

device# show running interface management 0
interface management 0
ip address dhcp
shutdown

device(config-if-mgmt-0)# ip address dhcp
Error: IPv4 Address already configured.
```

ip dns

Configures the DNS IP address.

Syntax

ip dns domain-name *NAME*

ip dns name-server [*A.B.C.D* | *XX:XX::XX*]

no ip dns domain-name *NAME*

no ip dns name-server [*A.B.C.D* | *XX:XX::XX*]

Parameters

domain-name *NAME*

Specifies the DNS domain name.

name-server *A.B.C.D* | *XX:XX::XX*

Specifies the IPv4 or IPv6 address of the DNS name server.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

A maximum of 6 DNS domain names is supported.

A maximum of 3 DNS name servers is supported.

The **no ip dns domain-name** command removes the specified DNS domain name.

The **no ip dns name-server** command removes the specified DNS name server.

Examples

The following example configures IP DNS domain name.

```
device(config)# ip dns domain-name extreme.com

device(config)# ip dns domain-name corp.extreme.com

device(config)# do sh running-config ip dns
ip dns domain-name corp.extremenetworks.com
ip dns domain-name extremenetworks.com
ip dns name-server 10.6.16.32
ip dns name-server 10.6.24.30
ip dns name-server 1111:2222::1
```

```
device(config)# ip dns domain-name test7
Reached max number of domain names (6)
```

The following example configures IP DNS name server.

```
device(config)# ip dns name-server 10.6.16.32

device(config)# ip dns name-server 1111:2222::1

device# sh running-config ip dns
ip dns name-server 10.6.16.32
ip dns name-server 1111:2222::1

device(config)# ip dns name-server 0.0.0.0
Not a unicast IP address

device(config)# ip dns name-server 255.255.255.255
Not a unicast IP address

device(config)# ip dns name-server ff00::00
Not a unicast IP address

device(config)# ip dns name-server 4.4.4.4
Reached max number of name servers(3)
```

ip gateway

Configures IPv4 gateway for the interfaces.

Syntax

ip gateway *A.B.C.D*

no ip gateway *A.B.C.D*

Parameters

A.B.C.D

Specifies the IPv4 gateway configuration.

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported on management interfaces.

Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

The **no ip gateway** command removes the IP gateway configured on the interface.

Examples

The following example configures ipv4 gateway.

```
device# configure terminal
device(config)# interface management 0
device(config-if-mgmt-0)# ip gateway 192.168.122.1

device# show running interface management 0
interface management 0
no ip address dhcp
ip address 192.168.122.10/24
ip gateway 192.168.122.1
shutdown

device(config-if-mgmt-0)# ip gateway 0.0.0.0
Error: Invalid IP Address
device(config-if-mgmt-0)# ip gateway 255.255.255.255
Error: Invalid IP Address
device(config-if-mgmt-0)# ip gateway 234.0.0.1
Error: Invalid IP Address
```

ipv6 access-list

Creates an IPv6 access list that contains rules that permit or deny traffic based on packet fields of the IPv6 family of protocols.

Syntax

ipv6 access-list *name*

no ipv6 access-list *name*

Parameters

name

Specifies the name of the IPv6 access list. Names cannot exceed 64 characters and must start with an alphabetic character or an underscore, followed by alphabetic or numeric characters or dots. Reserved keywords cannot be used, such as `all` or `egress`.

Modes

Config mode

Usage Guidelines

On successful completion CLI mode changes from `config` to `ipv6-acl`.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Table 26: Error messages

Message	Reason
`Error: ipv6-acl name identifier cannot exceed 64 characters.`	ACL name is longer than 64 characters.
`Error: ipv6-acl name identifier must start with an alphabetic character or an underscore`	ACL name begins with non-alphabetic character or does not begin with an underscore.
`Error: ipv6-acl name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens, or dots.`	ACL name contains invalid characters.
`Error: ipv6-acl name identifier must not be reserved keyword "access-list".`	ACL name includes the reserved word `access-list`

Examples

The following example creates an IPv6 access list, P6.

```
device# configure terminal
device(config)#ipv6 access-list P6
device(config-ipv6-acl)#

device# show running-config ipv6 access-list ip6-acl
ipv6 access-list ip6-acl

device# show running-config ipv6 access-list all
ipv6 access-list ip6-acl
```

ipv6 address

Configures the IPv6 address for the interfaces.

Syntax

ipv6 address *A:B::C:D/M*

no ipv6 address *A:B::C:D/M*

ipv6 address *dhcp*

no ipv6 address *dhcp*

Parameters

A:B::C:D/M

Specifies the IPv6 address configuration.

dhcp

Specifies the DHCP IPv6 address.

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported on management interfaces.

Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

The command `no ipv6 address` removes the IPv6 address configured on the interface.

The command `no ipv6 address dhcp` removes the DHCP IPv6 address configured on the interface.

Examples

The following example configures the IPv6 address.

```
device# configure terminal
device(config)# interface management 0
device(config-if-mgmt-0)# ipv6 address 2001:db8:fe::100/120

device# show running interface management 0
interface management 0
ipv6 address 2001:db8:fe::100/120
shutdown

device(config-if-mgmt-0)# ipv6 address ff00:0:0:0:0:0:0:0/8
Error: Not a unicast IP address
```

The following example configures the DHCP IPv6 address.

```
device# configure terminal
device(config)# interface management 0
device(config-if-mgmt-0)# ipv6 address dhcp

device# show running interface management 0
interface management 0
ipv6 address dhcp
shutdown

device(config-if-mgmt-0)# ipv6 address dhcp
Error: IPv6 Address already configured.
```

ipv6 gateway

Configures IPv6 gateway for the interfaces.

Syntax

ipv6 gateway *A:B::C:D*

no ipv6 gateway *A:B::C:D*

Parameters

A:B::C:D

Specifies the ipv6 gateway configuration.

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported on management interfaces.

Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

The **no ipv6 gateway** command removes the IP gateway configured on the interface.

Table 27: Error messages

`Invalid IP Address`	Ill-formed or invalid IPv6 address.

Examples

The following example configures ipv6 gateway.

```
device# configure terminal
device(config)# interface management 0
device(config-if-mgmt-0)# ipv6 gateway 2001:db8:fe::2

device# show running interface management 0
interface management 0
ipv6 gateway 2001:db8:fe::2
shutdown

device(config-if-mgmt-0)# ipv6 gateway ff00:0:0:0:0:0:0:0
Error: Invalid IP Address
```

link-fault-signaling

Enables or disables link-fault-signaling.

Syntax

link-fault-signaling

no link-fault-signaling

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is not allowed on management interface.

The **no link-fault-signaling** command disables link-fault-signaling.

Examples

The following example enables link-fault-signaling.

```
device(config-if-eth-1/8)# link-fault-signaling

device# show int e 1/8:2
ethernet 1/8:2 Admin state UP      Operational state DOWN
 Interface index is 268435873 (0x100001a1)
 MTU 9216 bytes
 Hardware is Ethernet  mac address 40:88:2f:c1:02:0d
 Current Speed  10G
 FEC Mode: disabled
 Link Fault Signaling: ON
 Link Fault Status: Remote fault
```

The following example disables link-fault-signaling.

```
device(config-if-eth-1/8)# no link-fault-signaling
```

listener-policy

Creates or removes a listener policy.

Syntax

listener-policy { *name sequence-id* }

no listener-policy { [*name sequence-id*]| *sequence-id* | **all** }

Parameters

name

Specifies the listener policy name. Supports 1-64 characters. Characters allowed are alpha-numeric, underscore, and dot.

Underscore is not allowed as the first character.

sequence-id

Specifies the sequence id. The range is 1-65535.

all

Specifies that all listener policies are to be deleted with the `no` form of the command.

Modes

Config mode

Usage Guidelines

Valid listener policy name must be provided.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Attempts to remove any listener policy that is not configured are ignored.

Table 28: Error messages

Message	Reason
`Error: listener-policy name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots`	Name begins with non-alphabetic character, contains invalid characters, or does not begin with an underscore.
`Error: listener-policy name identifier must start with an alphabetic character or an underscore`	Name begins with non-alphabetic character or does not begin with an underscore.

Table 28: Error messages (continued)

Message	Reason
`Error: listener-policy name identifier cannot exceed 64 characters`	Name is longer than 64 characters.
`Error: listener-policy name identifier must not be reserved keyword`	Name includes the reserved word indicated.

Examples

The following examples show how to configure a listener policy.

```
device# configure terminal
device(config)# listener-policy lp1 4 13

device(config)# listener-policy lp2 5

device(config)# no listener-policy lp1 4 13
device(config)# no listener-policy lp2 5
```

The following example removes the configured listener policy.

```
device# configure terminal
device(config)# no listener-policy lp1 4 243
```

The following examples show error messages for the listener policy command.

```
device(config)# listener-policy #abc1 100
Error: listener-policy name identifier must start with an alphabetic character or an
underscore

device(config-listener-policy)# listener-policy
abcdefghijklmnopqrstuvwxyz_abcdefghijklmnopqrstuvwxyz_abcdefghijklmnopqrstuvwxyz
Error: listener-policy name identifier cannot exceed 64 characters

device(config-listener-policy)# listener-policy egress 10 23
Error: listener-policy name identifier must not be reserved keyword "egress"
```

load-balance

Enables or disables masking of tunnel ID while computing hashing for per LAG basis.

Syntax

load-balance [**src-dst-ip-l4port-tid** | **src-dst-ip-l4port**]

no load-balance

Parameters

src-dst-ip-l4port-tid

Specifies source IP, destination IP, l4 port, protocol, and specific GTP tunnel ID-based load-balancing.

src-dst-ip-l4port

Specifies source IP, destination IP, l4port, and protocol-based load balancing (default) method.

Modes

Port-channel config mode

Usage Guidelines

This command is available only to users with admin role.

The port-channel must be created first.

The **no load-balance** command sets the default value to LAG hash.

The load-balance method configured in other egress-objects that co-exist in the same egress-group must match the new load-balance setting.

If there is a conflict in load-balance setting with other egress objects:

- Unconfigure the load-balance method in other port-channels co-existing in egress-groups.
- Configure the new load-balance method in all port-channels that co-exist in egress-groups with the current port-channel.

Examples

The following example enables the `src-dst-ip-l4port-tid` load balancing method.

```
device# configure terminal
device(config)# interface port-channel 1
device(config-if-po-1)# load-balance src-dst-ip-l4port-tid

device(config)# do show egress-group all
Number of egress-groups: 1
    Name : egg1
          egress : eg2
          egress : eg3
```

```
device(config)# interface port-channel 1
device(config-if-po-1)# load-balance src-dst-ip-l4port-tid
device(config-if-po-1)# exit
device(config)# interface port-channel 2
device(config-if-po-2)# load-balance src-dst-ip-l4port

Error: all egress objects present in group should have same load balance type. eg2 has
type SRC_DST_IP_L4_PORT_TID

Corrective action is as follows: Unconfigure load-balance in port-channel, and configure
the same method in both port-channels. Now, it is accepted.

device# interface port-channel 1
device(config-if-po-1)# no load-balance
device(config-if-po-1)# load-balance src-dst-ip-l4port
device(config-if-po-1)# exit
device(config)# interface port-channel 2
device(config-if-po-2)# load-balance src-dst-ip-l4port
device(config-if-po-2)#   -->
```

mac access-list

Creates a MAC access control list that contains rules that permit or deny traffic based on packet fields of the L2 OSI layer.

Syntax

mac access-list name

no mac access-list [**name** | **all**]

Parameters

name

Specifies the name of the MAC ACL. Names cannot exceed 64 characters and must start with an alphabetic character or an underscore, followed by alphabetic or numeric characters or dots. Reserved keywords cannot be used, such as `all` or `egress`.

all

Specifies all MAC ACLs.

Modes

Config mode

Table 29: Error messages

Message	Reason
`Error: l2-acl name identifier cannot exceed 64 characters.`	Name is longer than 64 characters.
`Error: l2-acl name identifier must start with an alphabetic character or an underscore.`	Name begins with non-alphabetic character or does not begin with an underscore.
`Error: l2-acl name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens, or dots.`	Name contains invalid characters.
`Error: l2-acl name identifier must not be reserved keyword`	Name includes the reserved word identified.
`Error: keypath contains key value with unsupported character (@, $, #, '[, ]').`	Name contains invalid characters.

Usage Guidelines

Command-line mode changes from `config` to `config-mac-acl` after new MAC ACL is created.

The **[no]** form of the command removes the specific or all configured MAC ACLs.

Examples

The following example creates a MAC ACL named L2 and on successful creation, the mode changes to `config-mac acl`.

```
device# configure terminal
device(config)# mac access-list L2
device(config-mac-acl)#

device# show running-config access-list
mac access-list L2

device# show running-config mac access-list L2
mac access-list L2

device# show running-config mac access-list all
mac access-list L2
```

The following example deletes the MAC ACL named L2.

```
device# configure terminal
device(config)# no mac access-list L2
```

match ip access-list

Configures or deletes IPv4 access list (ACL) match criteria assigned to a route-map or listener-policy instance.

Syntax

match ip access-list *name*

no match ip access-list *name*

Parameters

name

Specifies the name of the IPv4 ACL to be matched and assigned to the current route map.

Modes

Route-map config mode

Listener-policy config mode

Usage Guidelines

If match criteria succeed, the next action is decided by the permit | deny clause of route map:

- If permitted, packet-forwarding behavior is based on the match and set actions.
- If denied, packets are dropped.

If match criteria fail, this command is not applied and packets are evaluated by other route-map clauses.

Examples

The following example configures IPv4 ACL matching criteria for `ipv4-1` for the route-map instance.

```
device(conf-route-map)# match ip access-list ipv4-1
```

The following example deletes the IPv4 ACL named `ipv4-1` from the current route map.

```
device(conf-route-map)# no match ip access-list ipv4-1
```

match ipv6 access-list

Configures or deletes IPv6 ACL match criteria assigned to a route-map or listener-policy instance.

Syntax

match ipv6 access-list *aclname*

no match ipv6 access-list *aclname*

Parameters

aclname

Specifies the name of the IPv6 ACL to be matched and assigned to the current route map.

Modes

Route-map config mode

Listener-policy config mode

Usage Guidelines

If match criteria succeed, the next action is decided by the permit | deny clause of route map:

- If permitted, packet-forwarding behavior is based on the match and set actions.
- If denied, packets are dropped.

If match criteria fail, this command is not applied and packets are evaluated by other route-map clauses.

Examples

The following example configures the IPv6 ACL named `ipv6-1` to be matched for the current route map.

```
device(conf-route-map)# match ip access-list ipv6-1
```

The following example deletes the IPv6 ACL named `ipv6-1` from the current route map.

```
conf-route-map#
(conf-route-map)# no match ip access-list ipv6-1
```

match mac access-list

Configures or deletes L2/MAC access list (ACL) match criteria for the current route-map or listener-policy instance.

Syntax

match mac access-list *aclname*

no match mac access-list *aclname*

Parameters

aclname

Specifies the name of the L2/MAC ACL to be matched and assigned to the current route map.

Modes

Route-map config mode

Listener-policy config mode

Usage Guidelines

If match criteria succeed, the next action is decided by the permit | deny clause of route map:

- If permitted, packet-forwarding behavior is based on the match and set actions.
- If denied, packets are dropped.

If match criteria fail, this command is not applied and packets are evaluated by other route-map clauses.

Examples

The following example configures the L2/MAC ACL named to be matched for the current route map.

```
device(conf-route-map)# match mac access-list mac-1
```

The following example deletes the L2/MAC ACL named from the current route map.

```
device(conf-route-map)# no match mac access-list mac-1
```

mirror

Configures the mirror object to monitor traffic.

Syntax

mirror *name*

no mirror *name*

Parameters

mirror *name*

Specifies the name of the configured mirror object.

The name cannot exceed 64 characters. The name must start with an alphabet or an underscore. The name must contain alphabets, numerals, and special characters (underscores, hyphens, or periods).

Modes

Config mode

Usage Guidelines

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

If the **[no]** form of the command is run with the configuration, all sub-mode configurations are removed automatically.

Examples

The following example configures the mirror object to monitor traffic.

```
device# configure
device(config)# mirror mirr_1
device(config-mirror)#

device# show mirror mirr_1
                  Name : mirr_1
           Description : -
             Interface : none
```

The following examples show error messages.

```
Error: mirror name identifier must start with an alphabetic character or an underscore

Error: mirror name identifier must be an arbitrary sequence of alphabets, numerals,
alphanumeric, underscores, hyphens or dots

Error: mirror name identifier cannot exceed 64 characters
```

mtu

Configures the global or interface MTU value.

Syntax

mtu *value*

no mtu *value*

Parameters

mtu *value*

Specifies MTU value of an interface. Valid range is 1024-9216. Default MTU value is 9216.

Modes

Interface config mode

Usage Guidelines

The MTU configured in the specified interface overrides the global MTU.

The **no mtu value** command sets the MTU to the default value, 9216.

This command is available only to users with admin role.

Running this command causes changes that trigger port flap. As a best practice, run this command during a maintenance window to avoid service disruptions.

Table 30: Error messages

Error message	Reason
`% Unknown command.`	Throws an error if MTU value is outside valid range, as shown in the following example: `device(config-if-eth-1/1)# mtu 100`

Examples

The following examples show how to configure global and interface MTU value.

```
device# configure terminal
device(config)# mtu 4000

device# configure terminal
device(config)# interface ethernet 1/10
device(config-if-eth 1/10)# mtu 4000
device(config-if-eth-1/1)# mtu 100
% Unknown command.

device# show running interface ethernet 1/10
interface ethernet 1/10
```

```
mtu 4000
shutdown
```

new-scope

Configures scope shift for the current tunnel of the received packet.

Syntax

new-scope

no new-scope

Parameters

new-scope

Enables scope shift for the route-map.

Modes

Route-map config mode

Usage Guidelines

The **no new-scope** command disables scope shift for the route-map.

When **new-scope** is enabled, the packet headers are not decapsulated. The scope of the header is shifted to inner headers in the packet. Further blocks in the packet processing pipeline start using inner headers of the packet.

Examples

The following example configures scope shift for the route-map.

```
device(conf)# route-map rmap1 10

device(conf-route-map)# new-scope
device(config-route-map)# do show route-map all
route-map rmap1 10
forward-action deny
decap
new-scope
Policy matches: 0 packets, 0 bytes, 0 Packets/sec, 0 Bits/sec
device(config)# route-map rt 1
device(config-route-map)# decap
device(config-route-map)# new-scope
Error: Terminate is enabled on route-map rt, scopeshift can't enable

device(config-route-map)# no new-scope
Error: scopeshift not configured in this route map rt
```

ntp

Enables and configures Network Time Protocol (NTP).

Syntax

ntp enable

ntp server [*ip address* | *domain name*]

ntp peer [*ip address* | *domain name*]

no ntp enable

no ntp server [*ip address* | *domain name*]

no ntp peer [*ip address* | *domain name*]

Command Default

NTP is disabled by default.

Parameters

enable

Enables NTP feature.

domain name

Specifies the domain name.

ip address

Specifies the IPv4 or IPv6 address.

peer

Specifies the NTP peer.

server

Specifies the NTP server.

Modes

Config mode

Usage Guidelines

Both IPv4 and IPv6 addresses are supported.

This command is available only to users with admin role.

NTP is disabled by default. You must enable it explicitly when configuring NTP servers and peers.

The **no ntp enable** command disables NTP feature.

The **no ntp server [ip address | domain name]** command deletes the NTP server.

The **no ntp peer [ip address | domain name]** command disables the /NTP peer.

Examples

The following example disables NTP.

```
device# configure terminal
device(config)# no ntp enable
```

The following example deletes the NTP server IP from the system.

```
device# configure terminal
device(config)# no ntp server 1.1.1.1

device(config)# ntp server 1.1.1.1.1
Error: Invalid address
```

The following example deletes the NTP peer IP from the system.

```
device# configure terminal
device(config)# no ntp peer 1.1.1.1

device(config)# ntp peer 1.1.1.1.1
Error: Invalid address
```

ping

Sends ICMP echo requests to the specified IP or host.

Syntax

ping [[**A.B.C.D** | **NAME**] | [**ipv6** [**IPADDR** | **NAME**]] [**count** *1-1000* | **datagram-size** *64-9000* | **quiet** | **timeout** *1-60*]

Parameters

A.B.C.D

Specifies the destination IPV4 address.

IPADDR

Specifies the destination IPV6 address.

NAME

Specifies the destination host name.

count *1-1000*

Specifies the number of attempts to ping the host. The range is 1-1000, default is 5.

datagram-size *18-9000*

Specifies the size of ping frame. The range is 64-9000, default is 64 bytes.

quiet

Specifies that there is no output except the start-up and finishing line.

timeout

Specifies the timeout value in seconds. The range is 1-60, default is 5 seconds.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

This command is also supported on gNOI.

Examples

The following example shows how to use the ping command.

```
device# ping 10.20.73.129 count 3 datagram-size 1000 timeout 2

PING 10.20.73.129 (10.20.73.129) 1000(1028) bytes of data.
1008 bytes from 10.20.73.129: icmp_seq=1 ttl=63 time=1.91 ms
1008 bytes from 10.20.73.129: icmp_seq=2 ttl=63 time=0.684 ms
1008 bytes from 10.20.73.129: icmp_seq=3 ttl=63 time=0.592 ms
```

```
 --- 10.20.73.129 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2013ms
rtt min/avg/max/mdev = 0.592/1.064/1.916/0.603 ms

device# ping www.google.com
PING www.google.com (172.217.165.132) 64(92) bytes of data.
72 bytes from 172.217.165.132 (172.217.165.132): icmp_seq=1 ttl=107 time=66.4 ms
72 bytes from 172.217.165.132 (172.217.165.132): icmp_seq=2 ttl=107 time=66.4 ms
72 bytes from 172.217.165.132 (172.217.165.132): icmp_seq=3 ttl=107 time=66.4 ms
72 bytes from 172.217.165.132 (172.217.165.132): icmp_seq=4 ttl=107 time=66.4 ms
72 bytes from 172.217.165.132 (172.217.165.132): icmp_seq=5 ttl=107 time=66.5 ms

--- www.google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 66.469/66.488/66.502/0.010 ms

device# ping -6 www.google.com
PING www.google.com(sfo03s01-in-x04.1e100.net) 56 data bytes
64 bytes from sfo03s01-in-x04.1e100.net: icmp_seq=1 ttl=121 time=1.44 ms
64 bytes from sfo03s01-in-x04.1e100.net: icmp_seq=2 ttl=121 time=1.51 ms
64 bytes from sfo03s01-in-x04.1e100.net: icmp_seq=3 ttl=121 time=1.52 ms
64 bytes from sfo03s01-in-x04.1e100.net: icmp_seq=4 ttl=121 time=1.54 ms
64 bytes from sfo03s01-in-x04.1e100.net: icmp_seq=5 ttl=121 time=1.51 ms

--- www.google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4005ms
rtt min/avg/max/mdev = 1.446/1.510/1.545/0.041 ms
```

The following examples show error messages.

```
device# ping 255.255.255.255
Error: Broadcast address not allowed

device# ping abcd
Error: Host resolution failed
```

port

Configures the port number of the Remote syslog server (Rsyslog).

Syntax

port [*514-530*]

Parameters

port *514-530*

Specifies port numbers between 514-530.

Modes

Host configuration mode

Examples

The following example configures the port number of the Remote syslog server.

```
device(config-logging-host-H1)# port 514
Warning: Existing Host configuration changed
device(config-logging-host-h1)# port 510
% Unknown command.

device(config-logging-host-h1)# port abc
% Unknown command.

device(config-logging-host-h1)# port
<514-530>  Remote server port number <514-530> [default:514]

device(config-logging-host-h1)# port 514
Host already configured!
```

precedence

Configures or deletes interface from the egress object at the precedence.

Syntax

precedence *num* |**interface ethernet** *if-name*

no precedence *num* |**interface ethernet** *if-name*

Parameters

precedence*num*

Specifies the precedence value. Valid range is 1-65535.

interface ethernet *if-name*

Specifies the interface name.

Modes

Egress config mode

Usage Guidelines

A valid interface for the platform must be provided.

The **no precedence <num> interface ethernet <if-name>** command deletes interface from the egress instance.

Examples

The following example configures the egress object, egress-123 at precedence 10 and 20.

```
# conf (conf)# egress egress-123
(conf-egress)# precedence 10 interface ethernet 2/10

Show running:
Egress egress-123
Precedence 10 interface ethernet 2/10
```

route-map

Configures a route-map instance that dictates the packet forwarding behavior based on the match and set actions for ingress ACLs.

Syntax

route-map *name sequence_number*

no route-map { *name sequence_number* } | **all**

Parameters

name

Specifies the name of the route-map to be used for packet forwarding as part of this ingress group. Range is 1-64.

The name identifier must start with an alphabetic character or an underscore followed by an arbitrary sequence of alphabetic or numeric characters, underscores, hyphens, or dots.

sequence_number

Assigns sequence number to the route-map instance. This defines the order of route-map instances within a route-map. Range is 1-65535.

all

Specifies all route-maps when using the `no` form of this command.

Modes

Config mode

Usage Guidelines

Two route-map instances cannot have the same sequence-number.

Any attempts to remove an unconfigured route-map are ignored.

The **no route-map name** command deletes a route-map and **no route-map [name] [sequence-number]** command deletes the route-map with the specified sequence number.

Table 31: Error messages

Message	Reason
`Error: route-map name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots`	Name begins with non-alphabetic character, contains invalid characters, or does not begin with an underscore.
`Error: route-map name identifier must start with an alphabetic character or an underscore`	Name begins with non-alphabetic character or does not begin with an underscore.

Table 31: Error messages (continued)

Message	Reason
`Error: route-map name identifier cannot exceed 64 characters`	Name is longer than 64 characters.
`Error: route-map name identifier must not be reserved keyword`	Name includes the reserved word indicated.

The following examples show how to configure a route-map named rmap1 with the sequence number 10.

```
device# configure terminal
device(config)# route-map rmap1 10
device(config-route-map)# match mac access-list mac_acl1
device(config-route-map)# match ip access-list ipv4_acl1
device(config-route-map)# match ipv6 access-list ipv6_acl1
device(config-route-map)# set egress-group eg200

device# show route-map all
route-map rm1 1
forward-action permit
match ip access-list acl4 (active)
match mac access-list acl2 (pending)
egress-group eg1
Policy matches: 0 packets, 0 bytes, 0 Packet/sed, 0 Bits/sec
```

The following examples delete a route map and a route map with a sequence number.

```
device# configure terminal
device(config)# no route-map rm1

device(config)# no route-map rmap1 10
```

The following examples show error messages for the route-map command.

```
device# configure terminal
device(config)# route-map ab#c1 100
Error: keypath:/routemaps/routemap[name=ab#c1]/name contains one or more unsupported
character ('@', '$', '#', '[', ']') for key:name

device(config)# route-map ^abc1 100
Error: route-map name identifier must be an arbitrary sequence of alphabets, numerals,
underscores, hyphens or dots.

device(config)# route-map
abcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabcabc 100
Error: route-map name identifier cannot exceed 64 characters

device(config-listener-policy)# route-map egress 10
Error:  route-map name identifier must not be reserved keyword "egress"

device(config)# route-map a]dff 20
Error: invalid keypath:/name error:path /name, contains invalid token name

device(config)# route-map a^abc1 100
Error: route-map name identifier must be an arbitrary sequence of alphabets, numerals,
underscores, hyphens or dots.
```

seq (ip access-list rules)

Inserts or removes filtering rules in IP Access Control Lists (ACLs).

Syntax

seq { *1-65535* } [**permit** | **deny**] [**tcp** | **udp** | **icmp** | **igmp** | **ip** |**esp** | *1-254*] | [**vxlan** | **nvgre** | **gre** | **ipip** |**gtpc** | **gtpu**] { *1-4294967295* } [**src-ip** | **prefix-length** | **src-ip src-mask**] [**dst-ip** | **prefix-length** | **dst-ip dst-mask**] { **sport** *1-65535*} { **dport** *1-65535* } {**sport-end** *1-65535* } { **dport-end 1-65535** } { **dscp 1-63** } { **length** *64-9000* | **length-end** *65-9000* } { **push** } { **sync** } { **ack** } { **fin** } { **urg** } { **cwr** } { **ece** } { **reset** } { [**morefragment** | **dontfragment**] } { **vlan** *0-4095*} { **count** } { **log** }

no seq *id*

Parameters

seq *id*

Specifies the sequence ID for the rule. This parameter is optional. Valid values range from 1 through 65535 and value must be unique within the selected IP ACL. If the value is not specified, a non-assigned value starting from 10 with an increment of 10 is assigned.

permit |**deny**

Specifies the forwarding action for the matching traffic.

tcp|**udp** | **icmp** |**igmp** | **ip** | **esp** | *number*

Specifies the protocol type of the traffic for non-tunneled packets.

number

Specifies the custom protocol number to be matched. Valid values range from 1 through 254.

push |**sync** | **ack** |**fin** |**urg** |**cwr** | **ece** | **reset**

Specifies the TCP protocol configuration. (Valid for only the TCP protocol.)

vxlan |**nvgre** | **gre** | **ipip** | **gtpc** | **gtpu**

Specifies the tunnel types supported for tunneled traffic. For tunnel types IP address and masks are mapped to the outer header. Valid values range from 1 through 4294967295.

- vxlan and nvgre tunnels allow vnid or vsid values in range of 1 through 16777215.
- gtpu and gtpc tunnels allow tunnel id values in range of 1 through 4294967295.

src-ip | **prefix-length** | **src-mask** | **dst-ip** | **prefix-length** | **dst-mask**

Specifies the source IP, source mask, destination IP, and destination mask of the traffic. These IP address and mask are displayed in dot separated decimal format.

Instead of mask, subnet prefix length also can be specified with `src-ip` and `dst-ip` .

length |**length-end**

Specifies the length of the IPv4 packets. The valid value range is 64 through 9000.

To match based on length range, `length` and `length-end` parameters are provided. The valid range is 65 through 9000.

When specifying range, `length` value is mandatory; specifying `length-end` alone is not valid. Length must be less than the `length-end`.

`sport | sport-end`

Specifies the sport source port value. The valid value range is 1 through 65535.

To match based on sport range, `sport` and `sport-end` parameters are provided.

When specifying range, `sport` value is mandatory; specifying `sport-end` alone is not valid. The source port value must be less than the `sport-end`.

`dport |dport-end`

Specifies the destination port. Valid value range is 1 through 65535.

To match based on dport range, `dport` and `dport-end` parameters are provided.

When specifying range, dport value is mandatory; specifying `dport-end` alone is not valid. The destination port value must be less than `dport-end`.

`count`

Enables counters for the rule.

`log`

Enables syslog for the rule.

`dscp`

Specifies the type of service field for IPv4 protocol. The valid value range is 1 to 63.

`vlan` *`vlan-id`*

Specifies the vlan-id. The valid value range is 0 to 4095.

`morefragment | dontfragment`

Specifies the fragment parameters.

Modes

IP ACL config mode

Usage Guidelines

GRE tunnel-type:

- Version-1 packets are not filtered with this setting.
- Version-0 packets are filtered successfully with this setting when Checksum, Key, or Sequence number are not configured.

GTPU tunnel type:

- Packets with outer IP and UDP port settings (ACL configured with *`ip address`* and sport/dport combination) are not forwarded to the egress.

The IPv4 Address and mask must be configured in dotted decimal notation.

Duplicate ACL rules are not allowed.

Conflicting ACL rules (rules with same match condition and different forwarding action) are not allowed.

The following specified length limitation applies to the `sport-end` and `dport-end` range length configuration.

Important

If you configure an IPv4 or IPv6 ACL rule to match a specific IP length and also configure an IPv4 or IPv6 ACL with an overlapping IP length range, then the rule with specific length will not work.

IPv*n* rules configured with specified lengths that overlap IPv*n* length-range configurations fail silently.

Example 1. The IPv6 ACL rule in this example will not work because the rule with a specific length (bold font) overlaps the configured IP ACL range from 100 through 200. The rule with the overlapping specified length fails silently.

```
ip access-list v4acl
 seq 10 permit ip any 1.0.0.1 255.255.255.0 length 100 length-end 200

ipv6 access-list v6acl
 seq 10 permit ipv6 any bbbb::bbbb ffff::ffff length 150
```

Example 2. The IPv6 ACL rule (bold font) in this example will not work because the rule with a specific length overlaps the range from 100 through 200. The rule with the overlapping specified length fails silently.

```
ipv6 access-list v6acl
 seq 10 permit ipv6 any aaaa::aaaa ffff::ffff length 100 length-end 200
 seq 20 permit ipv6 any bbbb::bbbb ffff::ffff length 150
```

Example 3. This IPv6 ACL rule example will not work because in this configuration, because the rule with a specific length (bold font) overlaps the range from 100 through 200. The rule with the overlapping specified length fails silently.

```
ipv6 access-list v6acl-1
 seq 10 permit ipv6 any aaaa::aaaa ffff::ffff length 100 length-end 200

ipv6 access-list v6acl-2
 seq 10 permit ipv6 any bbbb::bbbb ffff::ffff length 150
```

Table 32: Error messages

Message	Reason
`Error: seqid 10 already exist ip1.`	Sequence id is repeated within IP ACL named ip1.
`Error: source ip address must be in dotted-decimal format, each decimal number to be in range of 0-255. Example: 196.168.0.1`	Incorrect IPv4 address format for values src/dest address, src/dest mask values.
`% Value '0' not in range <1-65535>.`	Example: Sequence-id range error.
`% Value 'ip' not in range <1-254>`	Example: IP address outside valid range error.
`% Value '4294967296' not in range <1-4294967295>.`	Example: Tunnel-id range error.

Table 32: Error messages (continued)

Message	Reason
`% Value '65536' not in range <1-65535>.`	Example: Source port range error.
`% Value '65536' not in range <1-65535>.`	Example: Destination port range error.
`% Value '63' not in range <64-9000>.`	Example: Packet length error.
`% Value '65' not in range <0-63>.`	Example: DSCP range error.
`% Value '4096' not in range <0-4095>.`	Example: VLAN range error.

Examples

The following example configures `seq 1` for IP access list P4.

```
device# configure terminal
device(config)#ip access-list P4
device(config-ip-acl)# seq 1 permit udp 1.1.1.1 255.0.0.0 2.2.2.2 255.0.0.0 dontfragment

device# show running-config access-list
ip access-list ip-acl
  seq 20 permit ip 10.0.0.1 255.0.0.0 20.0.0.2 255.0.0.0

device# show running-config ip access-list ip-acl
ip access-list ip-acl
  seq 20 permit ip 10.0.0.1 255.0.0.0 20.0.0.2 255.0.0.0

device# show running-config ip access-list all
ip access-list ip-acl
  seq 20 permit ip 10.0.0.1 255.0.0.0 20.0.0.2 255.0.0.0
```

The following example deletes `seq 1`.

```
device(config-mac-acl)# no seq 1
```

Error messages:

Sequence id is repeated within ip access-list:

```
device(config-ip-acl)# seq 10 permit ip any any
Error: seqid 10 already exist ip1.
```

Incorrect IPv4 address format for *`src/dest`* address and *`src/dest`* mask:

```
device(config-ip-acl)# permit ip 123. 123. any
Error: source ip address must be in dotted-decimal format, each decimal number to be in
range of 0-255. Example: 196.168.0.1

device(config-ip-acl)# permit ip 10.0.0.1 255. any
Error: source ip mask must be in dotted-decimal format, each decimal number to be in
range of 0-255. Example: 196.168.0.1

device(config-ip-acl)# permit ip any 1234. 255.0.0.0
Error: destination ip address must be in dotted-decimal format, each decimal number to be
in range of 0-255. Example: 196.168.0.1
```

```
device(config-ip-acl)# permit ip 10.0.0.1 255.0.0.0 20.0.0.2 255.
Error: destination ip mask must be in dotted-decimal format, each decimal number to be in
range of 0-255. Example: 196.168.0.1
```

Sequence id range:

```
device(config-ip-acl)# seq 0
% Value '0' not in range <1-65535>.

device(config-ip-acl)# seq 65536
% Value '65536' not in range <1-65535>.
```

IPv4 address/mask range:

```
device(config-ip-acl)# seq 10 permit ip abc. abc.
% Value 'ip' not in range <1-254>.

device(config-ip-acl)# seq 10 permit ip asdf asdf
% Value 'ip' not in range <1-254>.
```

Tunnel-id range errors:

```
device(config-ip-acl)# seq 10 permit gtpu 4294967296
% Value '4294967296' not in range <1-4294967295>.

device(config-ip-acl)# seq 10 permit nvgre 4294967296
% Value '4294967296' not in range <1-4294967295>.
```

Source port range:

```
device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 sport
65536
% Value '65536' not in range <1-65535>.

device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 sport
65535 sport-end 65536
% Value '65536' not in range <1-65535>.
```

Destination port range:

```
device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 dport
65536
% Value '65536' not in range <1-65535>.

device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 dport
65535 dport-end 65536
% Value '65536' not in range <1-65535>.
```

Packet length range:

```
device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 length
63
% Value '63' not in range <64-9000>.

device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 length
9001
% Value '9001' not in range <64-9000>.

device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 length
65 length-end 9001
% Value '9001' not in range <65-9000>.
```

dscp range:

```
device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 dscp
<0-63>  Dscp from 0-63

device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 dscp
65
% Value '65' not in range <0-63>.
```

vlan range:

```
device(config-ip-acl)# seq 10 permit udp 10.0.0.2 255.255.0.0 20.0.0.2 255.255.0.0 vlan
4096
% Value '4096' not in range <0-4095>.
```

Duplicate rule:

```
device(config-ip-acl)# seq 1 permit ip any any
device(config-ip-acl)# seq 2 permit ip any any
Error: Sequence 2 is duplicate of Sequence 1.
```

Conflicting rule:

```
device(config-ip-acl)# seq 1 permit ip any any
device(config-ip-acl)# seq 2 deny ip any any
Error: Sequence 2 is conflicting with Sequence 1.
```

seq (ipv6 access-list rules)

Inserts filtering rules in IPv6 access lists (ACLs).

Syntax

seq { *1-65535* } [**permit** | **deny**] [**tcp** | **udp** | **icmpv6** | **igmpv6** | **ipv6** | **esp** | *1-254*] | [**vxlan** | **nvgre** | **gre** | **ipip** |**gtpc** | **gtpu**] { *1-4294967295* } [**src-ip** / **prefix-length** | **src-ip src-mask**] [**dst-ip** / **prefix-length** | **dst-ip dst-mask**] { **sport** *1-65535*} { **dport** *1-65535* } {**sport-end** *1-65535* } { **dport-end 1-65535** } { **dscp 1-63** } { **length** *64-9000* | **length-end** *65-9000* } { **push** } { **sync** } { **ack** } { **fin** } { **urg** } { **cwr** } { **ece** } { **reset** } { [**morefragment** | **dontfragment**] } { **vlan** *0-4095*} { **count** } { **log** }

no seq *id*

Parameters

seq *id*

Specifies the sequence ID for the rule. This parameter is mandatory. Valid values range from 1 through 65535 and value must be unique within the selected IP ACL. If the value is not specified, a non-assigned value starting from 10 with an increment of 10 is assigned.

permit |**deny**

Specifies the Forwarding Action for the matching traffic.

tcp|**udp** | **icmpv6** |**igmpv6** | **ipv6** | **esp** | *number*

Specifies the protocol type of the traffic for non-tunneled packets.

number

Valid values range from 1 through 254.

vxlan |**nvgre** | **gre** | **ipip** | **gtpc** | **gtpu**

Specifies the tunnel types supported for tunneled traffic. For tunnel types IP address and masks are mapped to the outer header. VNI and TEID are configured for the VXLAN and GTPU tunnels, respectively. Valid values range from 1 through 4294967295.

- vxlan/nvgre tunnels allow vnid/vsid values in range of 1-16777215.
- gtpu/gtpc tunnels allow tunnel id values in range of 1-4294967295.

src-ip | **prefix-length** | **src-mask** | **dst-ip** | **prefix-length** | **dst-mask**

Specifies the source IP, source mask, destination IP, and destination mask of the traffic. IP address and mask are displayed in hexadecimal format.

Instead of subnet mask, subnet prefix length also can be specified.

sport |**sport-end**

Specifies the sport source port value. The valid value range is 1 through 65535.

To match based on sport range, `sport` and `sport-end` parameters are provided.

When specifying range, sport value is mandatory; specifying `sport-end` alone is not valid. The source port value must be less than the `sport-end`.

dport |dport-end

Specifies the destination port. Valid value range is 1 through 65535.

To match based on dport range, `dport` and `dport-end` parameters are provided.

The destination port value must be less than `dport-end`.

dscp

Specifies the type of service field for IPv6 protocol. The valid value range is 1 through 63.

length |length-end

Specifies the length of the IPv6 packets. The valid value range is 64 to 9000.

To match based on length range, length and length-end parameters are provided. The valid range is 65 through 9000.

When specifying range, length value is mandatory; specifying length-end alone is not valid. Length must be less than the length-end. Length must be less than the length-end.

push |sync | ack | cwr | ece |reset | fin |urg

Specifies the TCP protocol configuration. (Valid for only the TCP protocol.)

vlan *vlan-id*

Specifies the vlan-id. The valid value range is 0 through 4095.

morefragment | dontfragment

Specifies the fragment parameters.

count

Enables counters for the rule.

log

Enables syslog for the rule.

Modes

IP ACL config mode

Usage Guidelines

GRE tunnel-type:

- Version-1 packets are not filtered with this setting.
- Version-0 packets are filtered successfully with this setting.

The following specified length limitation applies to the `sport-end` and `dport-end` range length configuration.

Important

If you configure an IPv4 or IPv6 ACL rule to match a specific IP length and also configure an IPv4 or IPv6 ACL with an overlapping IP length range, then the rule with specific length will not work.

IPv*n* rules configured with specified lengths that overlap IPv*n* length-range configurations fail silently.

Example 1. The IPv6 ACL rule in this example will not work because the rule with a specific length (bold font) overlaps the configured IP ACL range from 100 through 200. The rule with the overlapping specified length fails silently.

```
ip access-list v4acl
 seq 10 permit ip any 1.0.0.1 255.255.255.0 length 100 length-end 200

ipv6 access-list v6acl
 seq 10 permit ipv6 any bbbb::bbbb ffff::ffff length 150
```

Example 2. The IPv6 ACL rule (bold font) in this example will not work because the rule with a specific length overlaps the range from 100 through 200. The rule with the overlapping specified length fails silently.

```
ipv6 access-list v6acl
 seq 10 permit ipv6 any aaaa::aaaa ffff::ffff length 100 length-end 200
 seq 20 permit ipv6 any bbbb::bbbb ffff::ffff length 150
```

Example 3. This IPv6 ACL rule example will not work because in this configuration, because the rule with a specific length (bold font) overlaps the range from 100 through 200. The rule with the overlapping specified length fails silently.

```
ipv6 access-list v6acl-1
 seq 10 permit ipv6 any aaaa::aaaa ffff::ffff length 100 length-end 200

ipv6 access-list v6acl-2
 seq 10 permit ipv6 any bbbb::bbbb ffff::ffff length 150
```

Duplicate ACL rules are not allowed.

Conflicting ACL rules, rules with same match condition and different forwarding action are not allowed.

Table 33: Error messages

Message	Reason
`Error: seqid 10 already exist ip1.`	Sequence ID is repeated within IP ACL named ip1.
`Error: valid range for VNID is 1-16777215.`	VNID range exceeds for VxLAN protocol.
`Error: valid range for VSID is 1-16777215.`	VSID range exceeds for NVGRE protocol.
`Error: source ip address must be in X:X:X:X:X:X:X:X or X:X::X:X format. Each X can be up to 4 hexa-decimal digits. Example: 2001:0:0:0:0:0:0:1 or 2001::1`	IPv6 format must be used..

Table 33: Error messages (continued)

Message	Reason
`% Value '65536' not in range <1-65535>.`	Example: Sequencel-id range error.
`% Value '255' not in range <0-254>.`	Example: Custom Protocol Number range error.
`% Value '4294967296' not in range <1-4294967295>.`	Example: Tunnel-id range error (ngvre, gtpu, vxlan).
`% Value '65536' not in range <1-65535>.`	Example: Source port range error.
`% Value '9001' not in range <64-9000>.`	Example: Length errors.

Examples

The following example configures IPv6 ACL.

```
device# configure terminal
device(config)#ipv6 access-list ip6-acl
device(config-ip6-acl)# seq 1 permit 2000::1 FFFF::1 any any count log

device# show running-config access-list
ipv6 access-list ip6-acl
  seq 10 permit ipv6 2001::1 2001::0 2002::2 2002::0

device# show running-config ipv6 access-list all
ipv6 access-list ip6-acl
  seq 10 permit ipv6 2001::1 2001::0 2002::2 2002::0

device# show running-config ipv6 access-list all
ipv6 access-list ip6-acl
  seq 10 permit ipv6 2001::1 2001::0 2002::2 2002::0
```

Error messages

Sequence id is repeated within ipv6 access-list:

```
device(config)# ipv6 access-list ip6
device(config-ipv6-acl)# seq 10 permit ipv6  2001:01:2::1 2001:01:2::1 any
Error: seqid 10 already exist ip6.
```

VNID range exceeds for VxLAN protocol:

```
device(config-ipv6-acl)# permit vxlan 166777215 any any
Error: valid range for VNID is 1-16777215.
```

VSID range exceeds for NVGRE protocol:

```
device(config-ipv6-acl)# seq 20 permit nvgre 16777216 any any
Error: valid range for VSID is 1-16777215.
```

Invalid ipv6 formats:

```
Error: source ip address must be in X:X:X:X:X:X:X:X or X:X::X:X format. Each X can be
upto 4 hexa-decimal digits. Example: 2001:0:0:0:0:0:0:1 or 2001::1
```

Sequence-id range:

```
device#(config-ipv6-acl)# seq 65536
% Value '65536' not in range <1-65535>.
```

Custom Protocol Number:

```
device#(config-ipv6-acl)# seq 65535 permit 255
% Value '255' not in range <0-254>.
```

Tunnel-id:

```
device(config-ipv6-acl)# seq 65535 permit nvgre 4294967296
% Value '4294967296' not in range <1-4294967295>.

device(config-ipv6-acl)# seq 65535 permit vxlan 4294967296
% Value '4294967296' not in range <1-4294967295>.

device(config-ipv6-acl)# seq 100 permit gtpu 4294967296
% Value '4294967296' not in range <1-4294967295>.
```

Source port:

```
device(config-ipv6-acl)# seq 120 permit gre any any sport 65536
% Value '65536' not in range <1-65535>.

device(config-ipv6-acl)# seq 120 permit gre any any sport 65535 sport-end 65536
% Value '65536' not in range <1-65535>.

device(config-ipv6-acl)# seq 120 permit gre any any dport 65536
% Value '65536' not in range <1-65535>.

device(config-ipv6-acl)# seq 120 permit gre any any dport 65535 dport-end 65536
% Value '65536' not in range <1-65535>.
```

Length:

```
device(config-ipv6-acl)# seq 120 permit gre any any length 9001
% Value '9001' not in range <64-9000>.

device(config-ipv6-acl)# seq 120 permit gre any any length 63
% Value '63' not in range <64-9000>.

device(config-ipv6-acl)# seq 120 permit gre any any length 65 length-end 9001
% Value '9001' not in range <65-9000>.

device(config-ipv6-acl)# seq 120 permit gre any any length 65 length-end 63
% Value '63' not in range <65-9000>.
```

Duplicate rule:

```
device(config-ipv6-acl)# seq 1 permit ipv6 any any
device(config-ipv6-acl)# seq 2 permit ipv6 any any
Error: Sequence 2 is duplicate of Sequence 1.
```

Conflicting rule:

```
device(config-ipv6-acl)# seq 1 permit ipv6 any any
9920(config-ipv6-acl)# seq 2 deny ipv6 any any
Error: Sequence 2 is conflicting with Sequence 1.
```

seq (mac access-list rules)

Inserts filtering rules in L2 (MAC) Access Control Lists (ACL) to permit or deny traffic based on matching L2 protocols fields.

Syntax

```
seq id [ permit | deny ] {vxlan | gre |nvgre |gtpu |ipip }{ src-mac |
   src-mask | dst-mac | dst-mask } { vlan | etype |pcp |count |log }

no seq id
```

Parameters

seq *id*

Specifies the sequence ID for the rule. This parameter is mandatory. Valid values range from 1 through 65535. If the value is not specified, a non-assigned value starting from 10 with an increment of 10 is assigned.

permit |**deny**

Specifies the Forwarding Action for the matching traffic.

vxlan |**gre** |**nvgre** |**gtpu** |**ipip**

Specifies the optional parameters provided to support different tunnel types. For `vxlan` or `gtpu` tunnel types, `VNI` or `TEID` can be configured. The tunnel-id parameter can be supplied for only vxlan, gtpu, gtpc protocols and there is no CLI token for this parameter.

- Valid range for vxlan : 1-16777215
- Valid range for gtpu: 1-4294967295
- Valid range for gtpc: 1-429496729

src-mac

Specifies the source mac address. There is no explicit keyword. MAC addresses are represented by colon-separated one-byte hexa-decimal format. Zero padding must be used to make one-byte data into 2-digit value. For example, mac address 2:2:2:2:2:2 should be supplied as 02:02:02:02:02:02.

src-mask

Specifies the mask for the configured `src-mac`. To opt out of `src-mask`, use `any` instead of `src-mac`. There is no explicit keyword. MAC addresses are represented by colon-separated one-byte hexa-decimal format. Zero padding must be used to make one-byte data into 2-digit value. For example, mac address 2:2:2:2:2:2 should be supplied as 02:02:02:02:02:02.

dst-mac

Specifies the destination mac address. There is no explicit keyword. MAC addresses are represented by colon-separated one-byte hexa-decimal format. Zero padding must be used to make one-byte data into 2-digit value. For example, mac address 2:2:2:2:2:2 should be supplied as 02:02:02:02:02:02.

dst-mask

Specifies the mask for the configured `dst-mac`. To opt out `dst-mac` and `dst-mask`, use `any` instead of `dst-mac`. There is no explicit keyword. MAC addresses are represented by colon-separated one-byte hexa-decimal format. Zero padding must be used to make one-byte data into 2-digit value. For example, mac address 2:2:2:2:2:2 should be supplied as 02:02:02:02:02:02.

`vlan-tag`

Specifies the value of VLAN tag. Valid values range from 1 to 4095. This is an optional parameter.

`etype`

Specifies the value of ether type given in hexa decimal format. Valid values range from 0x01 to 0xFFFF, excluding 0x8100. Alternatively, one the following protocol names, arp/ipv4/ipv6, can be selected. This is an optional parameter.

`pcp`

Specifies the traffic class mapped to the outgoing PCP value when a packet egresses the switch. Valid values range from 0 through 7.

`count`

Enables counter for the current rule.

`log`

Enables logging for the current rule.

Modes

IP ACL config mode

Usage Guidelines

GRE tunnel-type:

- Version-1 packets are not filtered with this setting.
- Version-0 packets are filtered successfully with this setting.

GTPU tunnel type:

- Packets with outer IP and UDP port settings (ACL configured with *`ip address`* and *`sport/dport`* combination) are not forwarded to the egress.

This command configures rules to permit or drop traffic based on MAC address source and destination.

The order of the rules in an ACL is critical. The first matching rule stops further processing. When creating rules, specifying sequence values determines the order of rule processing. If the sequence value is not specified, the rule is added to the end of the list.

To delete a rule from an ACL:

- If you know the rule number, enter `no seq` *`seq-value`*.
- If you do not know the rule number, type `no` and then enter the full syntax without *seq-value*.

Duplicate ACL rules are not allowed.

Conflicting ACL rules, rules with same match condition and different forwarding action are not allowed.

The **[no]** form of the command removes the MAC ACL rule entry that matches the supplied sequence id within the current MAC ACL context.

Table 34: Error messages

Message	Reason
`Error: seqid 10 already exist mac1.`	Sequence ID is repeated within MAC ACL named mac1.
`Error: source mac address must be in colon-separated 1 byte hexa-decimal format with zero padding if needed. Example-00:04:96:22:33:44`	Zero padding must be added for src-mac, src-mask, dst-mac, dst-mask.
`Error: valid range for VNID is 1-16777215.`	VNID is outside valid range for VxLAN protocol.
`Error: invalid Ethernet Type. Valid range 0x600-0xFFFF`	Ethernet type is outside valid range format is incorrect.
`% Value '65536' not in range <1-65535>.`	Example: Sequencel-id range error.
`% Value '4096' not in range <0-4095>.`	Example: vlan range error.
`% Value '8' not in range <0-7>.`	Example: pcp range error.

Examples

The following example configures MAC ACL l2.

```
device# configure terminal
device(config)# mac access-list L2
device(config-mac-acl)# seq 1 permit 01:23:45:67:89:ab FF:FF.FF:FF.FF:FF
01:23:41:67:89:ac FF:FF.FF:FF.FF:00
```

The following example verifies that the MAC ACL was configured.

```
device(config-mac-acl)# show running-config access-list
mac access-list L2
  seq 10 permit 02:02:02:02:02:02 02:02:02:02:02:02 02:02:02:02:02:03 02:02:02:02:02:03

device# show running-config mac access-list all
mac access-list L2
  seq 10 permit 02:02:02:02:02:02 02:02:02:02:02:02 02:02:02:02:02:03 02:02:02:02:02:03
```

Error messages:

Sequence id is repeated within mac access-list:

```
device(config-mac-acl)# seq 10 permit gtpu any any
Error: seqid 10 already exist mac1.
```

Incorrect format for mac address/mask (for *src/dest address/mask*):

```
device(config-mac-acl)# permit 2:2:3:4:5:6 FF:FF:FF:FF:FF:FF any
```

```
Error: source mac address must be in colon-separated 1 byte hexa-decimal format with zero
padding if needed. Example-00:04:96:22:33:44

 device(config-mac-acl)# seq 130 permit gtpu any 03:03:03:03:03:03 f:f:f:f:f:f
Error: destination mac mask must be in colon-separated 1 byte hexa-decimal format with
zero padding if needed. Example-0F:0F:0F:FF:FF:FF


device(config-mac-acl)# permit vxlan 16777216 any any
Error: valid range for VNID is 1-16777215.

device(config-mac-acl)# permit any any etype 0x1ffff
Error: invalid Ethernet Type. Valid range 0x600-0xFFFF

device(config-mac-acl)# seq 10 permit any any etype 0x8100
Error: invalid Ethernet Type entered

device(config-mac-acl)# permit any any etype vlan
Error: invalid Ethernet Type entered

device(config-mac-acl)# permit any any etype igmp
Error: invalid Ethernet Type entered
```

Sequence id range:

```
device(config-mac-acl)# seq 65536
% Value '65536' not in range <1-65535>.

device(config-mac-acl)#
NPB(config-mac-acl)# seq 0
% Value '0' not in range <1-65535>.
```

Vlan id range:

```
device(config-mac-acl)# seq 20 permit gtpu 4294967295 any any vlan -1
% Value '-1' not in range <0-4095>.

device(config-mac-acl)# seq 20 permit gtpu 4294967295 any any vlan 4096
% Value '4096' not in range <0-4095>.
```

PCP value range:

```
device(config-mac-acl)# seq 20 permit gtpu 4294967295 any any pcp
  <0-7>  Pcp range <0-7>

device(config-mac-acl)# seq 20 permit gtpu 4294967295 any any pcp 8
% Value '8' not in range <0-7>.

device(config-mac-acl)# seq 20 permit gtpu 4294967295 any any pcp -1
% Value '-1' not in range <0-7>.
```

Duplicate rule:

```
device(config-mac-acl)# seq 1 permit any any
device(config-mac-acl)# seq 2 permit any any
Error: Sequence 2 is duplicate of Sequence 1.
```

Conflicting rule:

```
device(config-mac-acl)# seq 1 permit any any
device(config-mac-acl)# seq 2 deny any any
Error: Sequence 2 is conflicting with Sequence 1.
```

set egress

Sets the egress to be used by an egress group.

Syntax

set egress *name*

no set egress *name*

Parameters

name

Specifies the name of the configured egress. Name must not exceed 64 characters and must start with an alphabetic character or an underscore followed by an arbitrary sequence of alphabetic or numeric characters, underscores, hyphens, or dots.

Modes

Modes

Egress-group config mode

Usage Guidelines

You must have the admin role to perform this task.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

If the new egress object contains port-channel, the load-balance method of that port-channel must match the load-balance method configured in other egress-objects of the group.

If there is a conflict in load-balance setting with other egress objects:

- Unconfigure the load-balance method in other port-channels co-existing in egress-groups.
- Configure the same load-balance method in all port-channels that already exist in egress-groups and the new egress object
- Add the new egress object to the group.

Table 35: Error messages

Message	Reason
`Error: egress name identifier must start with an alphabetic character or an underscore.`	Egress name begins with non-alphabetic character or does not begin with an underscore.
`Error: egress name identifier cannot exceed 64 characters`	Egress name is longer than 64 characters.

Table 35: Error messages (continued)

Message	Reason
`Error: egress name identifier must start with an alphabetic character or an underscore`	Egress name begins with non-alphabetic character or does not begin with an underscore.
`Error: egress name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Egress name contains invalid characters.
`Error: egress name identifier must not be reserved keyword "egress".`	Egres name includes the reserved word `egress`

Examples

The following example binds an egress to an egress group.

```
device# configure terminal
device(config)# egress-group eg1
device(config-egress-group)# set egress egress_1

device# show running-config egress-group
egress-group eg1
  set egress egress_1
```

The following example unbinds an egress from an egress group.

```
device# configure terminal
device(config)# egress-group eg1
device(config-egress-group)# no set egress egress_1
```

The following example displays when the load-balance type is in conflict with new and existing egress objects:

```
Error: all egress objects present in group should have same load-balance type. new
egress(eg3) has conflicting type
```

Following example adds 2 egress objects containing port-channels with conflicting load-balance types. In this example, port-channel 1 was already mapped to eg1 and load-balance configured to src-dst-ip-l4port. The port-channel 2 was mapped to eg2 and load-balance configured to `src-dst-ip-l4port-tid`.

```
device(config)# egress-group egg1
device(config-egress-group)#
device(config-egress-group)# set egress eg1
device(config-egress-group)#
device(config-egress-group)# set egress eg2
Error: all egress objects present in group should have same loadbalance type. new
egress(eg2) has conflicting type
device(config-egress-group)#
device(config-egress-group)# exit
```

To correct this action, unconfigure load-balance type in port-channel 1, then configure it to match load-balance type of port-channel 2. After this corrective action, eg2 can be added to the group.

```
device(config)# interface port-channel 1
device(config-if-po-1)# no load-balance
device(config-if-po-1)# load-balance src-dst-ip-l4port-tid
```

```
device(config-if-po-1)#
device(config-if-po-1)# exit
device(config)# egress-group egg1
device(config-egress-group)# set egress eg2
device(config-egress-group)#
```

set egress-group

Sets the egress group to be used by the route map for forwarding matched packets.

Syntax

set egress-group *name*

no set egress-group *name*

Parameters

name

Specifies the configured egress group to be bound to the route map and used for packet forwarding. Name must not exceed 64 characters and must start with an alphabetic character or an underscore followed by an arbitrary sequence of alphabetic or numeric characters, underscores, hyphens, or dots.

Modes

Route-map config mode

Usage Guidelines

You must have the admin role to perform this task.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Table 36: Error messages

Message	Reason
`Error: egress-group name identifier must start with an alphabetic character or an underscore.`	Egress-group name begins with non-alphabetic character or does not begin with an underscore.
`Error: egress-group name identifier cannot exceed 64 characters`	Egress-group name is longer than 64 characters.
`Error: egress-group name identifier must start with an alphabetic character or an underscore`	Egress-group name begins with non-alphabetic character or does not begin with an underscore.
`Error: egress-group name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Egress-group name contains invalid characters.
`Error: egress-group name identifier must not be reserved keyword "egress-group".`	Egress-group name includes the reserved word `egress-group`

Examples

The following example configures egress-group egr1 to be used by the route map for forwarding matched packets.

```
device# configure terminal
device(config)# route-map rmap1 10
device(config-route-map)# set egress-group egr1
device(config-route-map)# end

device# show route-map all
route-map R1 10
forward-action permit
match ip access-list test_1 (active)
egress-group eg_1
Policy matches: 0 packets, 0 bytes, 0 PacketRate, 0 BitRate
```

The following example sets the egress for the egress-group and uses the show running-config command to verify the setting.

```
device# configure terminal
device(conf)# egress-group eg-100
device(conf-egress-group)#set egress egress-100

device# show running-config egress-group
egress-group eg-100
  set egress egress-100
```

The following example unbinds the egress-group egr1 from the route map.

```
device# configure terminal
device(config)# route-map rmap1 10
device(config-egress-group)# no set egress-group egr1
```

set encap

Sets tunnel encapsulation for an egress.

Syntax

set encap *name*

no set encap *name*

Parameters

name

Specifies the configured encap to be bound to the egress ro tunnel termination.

Modes

Config mode

Usage Guidelines

Tunnel encap must be configured before binding an encap with an egress.

Examples

The following example configures encap en1 to be used by egress_1 for encapsulation and uses the show command to verify the setting.

```
device# configure terminal
device(config)# egress egress_1
device(config-egress)# set encap en1
device(config-egress)# end

device# show egress all
egress egress_1
  set encap en1
```

The following example unbinds the encap en1 from egress_1.

```
device# configure terminal
device(config)# egress egress_1
device(config-egress)# no set encap en1
```

set ingress-group

Sets the ingress group to be used by the an interface or transport tunnel for forwarding matched packets.

Syntax

set ingress-group *name*

no set ingress-group *name*

Parameters

name

Specifies the configured ingress group to be bound to an interface or transport tunnel and used for packet forwarding. Name must not exceed 64 characters and must start with an alphabetic character or an underscore followed by an arbitrary sequence of alphabetic or numeric characters, underscores, hyphens, or dots.

Modes

Interface config mode

Transport tunnel config mode

Usage Guidelines

You must have the admin role to perform this task.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Table 37: Error messages

Message	Reason
`Error: ingress-group name identifier must start with an alphabetic character or an underscore.`	Name begins with non-alphabetic character or does not begin with an underscore.
`Error: ingress-group name identifier cannot exceed 64 characters`	Name is longer than 64 characters.
`Error: ingress-group name identifier must start with an alphabetic character or an underscore`	Name begins with non-alphabetic character or does not begin with an underscore.
`Error: ingress-group name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Name contains invalid characters.

Table 37: Error messages (continued)

Message	Reason
`Error: ingress-group name identifier must not be reserved keyword "ingress-group".`	Name includes the reserved word `ingress-group`.
`Error: ethernet slot/number is a member of port-channel number cannot bind to ingress-group`	Ingress-group binding is not allowed in port-channel member ports.

Examples

The following example configures ingress-group ig1 to be used by interface ethernet 1/1 for forwarding matched packets.

```
device# configure terminal
device(config)# interface ethernet 1/1
device(config-if-eth-1/1)# set ingress-group ig1
```

The following example configures ingress-group ig1 to be used by transport tunnel tt1 1 for forwarding matched packets.

```
device# configure terminal
device(config)# transport-tunnel tt1
device(config-tranport-tunnel)# set ingress-group ig1
```

The following example shows the configuration configures ingress-group ig1 to be used by port-channel 1 for forwarding matched packets.

```
device# show running-config interface ethernet 1/1
interface port-channel 1
  set ingress-group ig1
interface ethernet 1/1
  set ingress-group ig1
transport-tunnel tt1
  set ingress-group ig1
```

The following example unbinds ingress-group ig1 from the lp100 from transport tunnel tt1.

```
device# configure terminal
device(config)# transport-tunnel tt1
device(config-tranport-tunnel)# no set ingress-group ig1
```

set interface ethernet

Configures packet mirroring by specifying the egress port for the monitored traffic.

Syntax

set interface ethernet *name*

no set interface ethernet *name*

Parameters

interface ethernet *name*

Specifies the name of the interface for the mirror destination.

Modes

Config mode

Usage Guidelines

The name identifier must be a valid interface for the platform.

The name must be in slot/port format.

If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.

Examples

The following examples show how to configure description for an interface.

```
device# configure terminal
device(config)#
```

The following examples show error messages.

Mirror destination interface is already set:

```
Error: mirror interface is already configured
```

Invalid interface name:

```
device# configure terminal
device(config)#mirror mirr1
device(config-mirror)# set interface ethernet 0/0
Error: Interface does not exist

device(config-mirror)# set interface ethernet 10/4
Error: Interface does not exist
```

set listener-policy

Sets the listener policy to be used at egress for forwarding matched packets.

Syntax

set listener-policy *name*

no set listener-policy *name*

Parameters

name

Specifies the configured listener policy to be applied to matching packets at egress for packet forwarding. Name must not exceed 64 characters and must start with an alphabetic character or an underscore followed by an arbitrary sequence of alphabetic or numeric characters, underscores, hyphens, or dots.

Modes

Config mode

Usage Guidelines

You must have the admin role to perform this task.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Table 38: Error messages

Message	Reason
`Error: listener-policy name must start with an alphabetic character or an underscore.`	Name begins with non-alphabetic character or does not begin with an underscore.
`Error: listener-policy name identifier cannot exceed 64 characters`	Name is longer than 64 characters.
`Error: listener-policy name identifier must start with an alphabetic character or an underscore`	Name begins with non-alphabetic character or does not begin with an underscore.
`Error: listener-policy name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Name contains invalid characters.
`Error: listener-policy name identifier must not be reserved keyword "listener-policy".`	Name includes the reserved word `listener-policy`

Examples

The following example configures listener-policy lp100 to be used by egress_1 for packet forwarding.

```
device# configure terminal
device(config)# egress egress_1
device(config-egress)# set listener-policy lp100
device(config-egress)# end
device#
```

The following example verifies the configuration for egress_1.

```
device# show running-config egress egress_1
egress egress_1
  set listener-policy lp100
```

The following example unbinds the listener-policy lp100 from egress_1.

```
device# configure terminal
device(config)# egress egress_1
device(config-egress)# no set listener-policy lp100
```

set route-map

Sets the route map to be used by an ingress group for forwarding matched packets.

Syntax

set route-map *name*

no set route-map *name*

Parameters

name

Specifies the configured route map to be applied to matching packets for an ingress group for packet forwarding. Name must not exceed 64 characters and must start with an alphabetic character or an underscore followed by an arbitrary sequence of alphabetic or numeric characters, underscores, hyphens, or dots.

Modes

Ingress-group config mode

Usage Guidelines

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

Table 39: Error messages

Message	Reason
`Error: route-map name must start with an alphabetic character or an underscore.`	Name begins with non-alphabetic character or does not begin with an underscore.
`Error: route-map name identifier cannot exceed 64 characters`	Name is longer than 64 characters.
`Error: route-map name identifier must start with an alphabetic character or an underscore`	Name begins with non-alphabetic character or does not begin with an underscore.
`Error: route-map name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Name contains invalid characters.
`Error: route-map name identifier must not be reserved keyword "route-map ".`	Name includes the reserved word `route-map`

Examples

The following example configures route map rm1 to be used by ingress group ig1 for packet forwarding.

```
device# configure terminal
device(config)# ingress-group ig1
device(config-ingress-group)# set route-map rm1
device(config-ingress-group)# end
```

The following example uses the show command to verify the configuration for ingress group ig1.

```
device# show running-config ingress-group ig1
  ingress-group ig1
    set route-map rm1
```

The following example unbinds route map rm1 from ingress group ig1.

```
device# configure terminal
device(config)# ingress-group ig1
device(config-ingress-group)# no set route-map rm1
```

show

Displays the contents of a flash or USB file.

Syntax

show FLASH-FILE

show USB-FILE

Parameters

FLASH-FILE

Specifies the flash file path in format `flash://flash-type/file-name`.

USB-FILE

Specifies the USB file path in format `usb://file-name`.

Modes

Exec mode

Examples

The following example shows details of the `config-file`, `test`.

```
device# show file flash://config-file test

interface ethernet 1/1
  shutdown
interface ethernet 1/2
  shutdown
interface ethernet 1/3
  shutdown
interface ethernet 1/4
  shutdown
interface ethernet 1/5
  shutdown
interface ethernet 1/6
  shutdown
interface ethernet 1/7
  shutdown
interface ethernet 1/8
  shutdown
interface ethernet 1/9
  shutdown

device#  show usb://test
interface ethernet 0/1
 shutdown
interface ethernet 0/2
 shutdown
interface ethernet 0/3
 shutdown
interface ethernet 0/4
 shutdown
interface ethernet 0/5
```

```
  shutdown
interface ethernet 0/6
  shutdown
interface ethernet 0/7
  shutdown
interface ethernet 0/8
  shutdown
interface ethernet 0/9
  shutdown
```

The following example shows an error message.

USB not enabled:

```
device# show usb://test
  Error: USB not enabled
```

show acl-config

Displays the ACL global configurations.

Syntax

show acl-config

Parameters

acl-config

Specifies ACL common configurations.

Modes

Exec mode

Usage Guidelines

Examples

The following example displays the ACL global configurations.

```
device(config)# show acl-config
acl-config
  no enable acl-counter
```

show capture packet config

Displays all packet capture configurations on Ethernet ports.

Syntax

show capture packet config

Modes

Exec mode

Examples

The following example shows all packet capture configurations on Ethernet interfaces.

```
NPB# show capture packet config
All protocol RX capture is enabled on interface Eth 1/2
All protocol RX capture is enabled on interface Eth 1/3
All protocol RX capture is enabled on interface Eth 1/1
All protocol TX capture is enabled on interface Eth 1/1
```

show capture packet interface

Displays content of the active or latest PCAP file.

Syntax

show capture packet interface [**all** | **ethernet** *IFNAME*]

Parameters

all

Specifies interfaces on which packet capture is enabled.

ethernet *IFNAME*

Specifies interface type ethernet front panel port <slot/port>.

Modes

Exec mode

Usage Guidelines

The active PCAP file is updated at an interval of 10 seconds.

This command can decode and display packets with the following headers: ARP, Dot1Q, EAPOL, Ethernet, GTP, ICMP, ICMPv6, IPv4, Ipv6, LACP, LLC, LLDP, TCP, and UDP.

Examples

The following example shows content of the active PCAP file.

```
device# show capture packet interface all
-------------------------------------
Frames Logged on interface =  All
-------------------------------------


-----------------------------------------------------
Pkt Capture Metadata: #1 of 1 Packets
--------------------:--------------------------------
Frame Received  Time : Fri, 04 Dec 2020 20:25:02 UTC
Packet Length(bytes) : 64
Packet Direction     : RX
Packet Filter        : All
Front Panel Port     : 1/1
---------------------:--------------------
ETHERNET HEADER      :
---------------------:
SrcMAC               : 00:00:11:da:4d:72
DstMAC               : 00:00:00:f0:c9:b9
EtherType            : IPv4(0x800)
---------------------:--------------------
IPv4 HEADER          :
---------------------:
Src IP Address       : 1.0.10.2
Dst IP Address       : 1.0.10.1
```

```
Type of service      : 0
Total Length         : 28 Bytes
Identification       : 0x0
Fragmentation        : 0
TTL                  :  64
Protocol             : ICMPv4(1)
IP Checksum          : 0x24df
---------------------:--------------------
ICMP DETAILS         :
---------------------:
ICMP Hdr Type        : EchoRequest
ICMP Hdr Code        : 0x0
ICMP Hdr Checksum    : 0xf7f7
ICMP ID              : 0x0
ICMP Sequence No     : 0x8
---------------------:--------------------
--More--
```

show capture packet pcapfile-info

Displays metadata of packet capture files with the following headers: Ethernet, Dot1Q, IPv4, TCP, UDP, ARP, ICMP, EAPOL, LLC, LLDP, LACP, Ipv6, ICMPv6, GTP.

Syntax

show capture packet pcapfile-info

Parameters

pcapfile-info

Shows metadata of all packet capture files.

Modes

Exec mode

Examples

The following example shows metadata of all packet capture files.

```
NPB# show capture packet pcapfile-info
-------------------------------------------------
PCAP File(s)  Details:
-------------------------------------------------
Pcap  File Name : pktcapture_1.pcapng
Last Modified   : Fri Dec  4 11:54:08  2020 (UTC +0000)
PcapFile Size   : 0.48 KB
Packet Count    : 2

Pcap  File Name : pktcapture_2.pcapng
Last Modified   : Fri Dec  4 17:16:37  2020 (UTC +0000)
PcapFile Size   : 2.4 KB
Packet Count    : 10
-------------------------------------------------
```

show inventory

Displays the inventory detail for slot cards, power supply units, or both that are currently in use and whose status is UP.

Syntax

show inventory { **slot** | **power-supply** | **all** }

Parameters

slot

Specifies show inventory detail for slot cards.

power-supply

Specifies show inventory detail for power-supply units.

all

Specifies show inventory detail for all slot and power-supply units.

Modes

Exec mode

Examples

The following example displays inventory details for all slot cards.

```
device# show inventory slot
       Module    : Slot-1
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10036
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-2
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10035
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-3
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10034
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15
```

The following example shows all inventory detail for power supply units.

```
device# show inventory power-supply
       Module    : PSU-0
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40007
      Version    : S0F

       Module    : PSU-1
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40014
      Version    : S0F
```

The following example shows inventory detail for all cards and power supplies.

```
device# show inventory all
       Module    : Slot-1
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10036
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-2
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10035
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-3
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10034
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

 Module    : PSU-0
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40007
      Version    : S0F

       Module    : PSU-1
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40014
      Version    : S0F
```

show chassis

Displays the status for components in the device.

Syntax

show chassis

Modes

Exec mode

Examples

The following example displays chassis information on an SLX 9920.

```
NPB# show chassis
        PlatformName: x86_64-extremenetworks-chassis-9920
        Product Name: Extreme 9920-NPB-8
        FPGA Version: v2.12
        Hardware Rev: Beta
     ManufactureDate: 01/12/2021 00:30:00
        Manufacturer: Extreme Networks, Inc.
          PartNumber: 801103-00-04
        SerialNumber: AE012102Y-10006
              Vendor: Extreme Networks Inc.
         description: Extreme 9920-NPB-8, 4.14.49-OpenNetworkLinux, Version
NGNPB_v0.6.0-20210302_150946_UTC
              Status: Online
       Reboot Reason: None
      System Contact: jnixon@extremenetworks.com
     System Location: SJ_HQ2:EK20:U27
       System Uptime: 15m34s
                 Mac: 40:88:2f:c1:18:00
            MacRange: 1024
            LC Slots: 8
           Fan Count: 5
           Led Count: 4
           PSU Count: 4
        Sensor Count: 27
```

show clock

Displays the current time.

Syntax

show clock

Parameters

clock

Specifies the system clock.

Modes

Exec mode

Examples

The following example shows current time.

```
device# show clock

2020-11-18 10:24:01 UTC +0000
```

show counters egress

Displays egress counters information for the specified egress.

Syntax

show counters egress *name*

Parameters

name

Specifies the name of the egress for counter show. The egress name supports 1-32 characters. Characters allowed are alpha-numeric, underscore, and dot. Underscore is not allowed as the first character.

Modes

Exec mode

Usage Guidelines

Valid egress-name must be provided.

The `clear counters egress` command can be used to clear egress counters.

Examples

The following example shows egress statistics for egr1.

```
device# show egress counters egr1
Egress-group Packet Statistics
   TX Frames : 10
    TX Bytes : 1430
```

The following example shows egress statistics for all egresses.

```
device# show counters egress all
Egress Packet Statistics : ep_eg01_01
   TX Frames : 250000000
    TX Bytes : 130000000000

Egress Packet Statistics : ep_eg01_02
   TX Frames : 250000000
    TX Bytes : 130000000000
```

show counters egress-group

Displays the egress group counters for the specified egress group.

Syntax

show counters egress-group {*name* | **all** }

Parameters

name

Specifies show counters for the the named egress group.

The `egress-group-name` supports 1-32 characters. Characters allowed are alpha-numeric, underscore, and dot. Underscore is not allowed as the first character.

all

Specifies show counters for all configured egress groups.

Modes

Exec mode

Usage Guidelines

Valid egress group name must be provided.

Examples

The following example shows egress group counters information.

```
device# show counters egress-group eg1
Egress-group Packet Statistics : eg_01

   TX Frames : 500000000
    TX Bytes : 260000000000

Egress-group Packet Statistics : eg_02

   TX Frames : 500000000
    TX Bytes : 260000000000
```

show counters encap

Displays encap counters statistic for the specified or all encap objects.

Syntax

show counters encap { *all* | *name* }

Parameters

all

Specifies all encap counters.

name

Specifies the encap name.

Modes

Exec mode

Usage Guidelines

Valid encap name must be provided.

Examples

The following example shows information about encap counter encap_1.

```
device# show counters encap encap_1

Tunnel Encapsulation Statistics(GRE)
    Egress port : ethernet 1/2
      RX Frames : 0
       RX Bytes : 0
```

The following example shows information about all encap counters.

```
device# show counters encap all
```

show counters ingress-group

Displays ingress-group counters information.

Syntax

show counters ingress-group [*name* | **all**]

Parameters

name

Specifies the name of an ingress group.

all

Specifies counters information for all ingress groups.

Modes

Exec mode

Usage Guidelines

The traffic type must be configured for the ingress group.

Counters for non-transport tunnel type ingress groups is not supported.

Examples

The following example displays all ingress group counters information.

```
device# show counters ingress-group all
Number of ingress-groups: 2
Ingress-group Packet Statistics (Vxlan Tunnel)
        Name : IgVxlanVni100
   RX Frames : 0
    RX Bytes : 0
```

The following example shows the output when the ingress-group has VXLAN outer tunnel configuration:

```
device# show counters ingress-group all
Number of ingress-groups: 2
Ingress-group Packet Statistics (Vxlan Tunnel)
        Name : IgVxlanVni100
   RX Frames : 0
    RX Bytes : 0
Outer Tunnel (Vxlan)
    Rx Frames: 4
    RX Bytes: 788
```

show counters interface ethernet

Displays the counters of Ethernet interface.

Syntax

show counters interface ethernet [**IFNAME** | **port-channel** *number*| **brief**]

Parameters

IFNAME

Specifies the interface name in slot/port format. Examples: 1/1, 1/1-3, 5, 2/7-9

port-channel *number*

Specifies interface statistics for specified port channel number.

brief

Specifies brief interface stats

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example shows counters of Ethernet interface.

```
device# Interface Statistics: ethernet 1/1
Carrier Transitions: 0
           LastClear: 1h51m53.558433595s
Input:
              Total pkts: 20000000
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              FCS Errors: 0
              MCast pkts: 0
                  Octets: 7760000000
              UCast pkts: 20000000
               Runt pkts: 0
              CRC Errors: 0
Input Distribution:
             64 byte pkts: 0
         65-127 byte pkts: 0
        128-255 byte pkts: 0
        256-511 byte pkts: 10000000
       512-1023 byte pkts: 10000000
      1024-1518 byte pkts: 0
              Jumbo pkts: 0
Out:
              Total pkts: 0
```

```
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              MCast pkts: 0
                  Octets: 0
              UCast pkts: 0
Rate Info:
                   Input: 0.000000 Mbits/sec, 0 pkts/sec 0.00% of line-rate
                  Output: 0.000000 Mbits/sec, 0 pkts/sec 0.00% of line-rate
```

The following example shows statistics for port channel 3.

```
device# show counters interface port-channel 3
Interface Statistics: port-channel 3
Carrier Transitions: 3
           LastClear: 1m58.104973563s
Input:
              Total pkts: 0
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              FCS Errors: 0
              MCast pkts: 0
                  Octets: 0
              UCast pkts: 0
Out:
              Total pkts: 0
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              MCast pkts: 0
                  Octets: 130000000000
              UCast pkts: 250000000
```

The following example shows brief stats output for the ethernet interface.

```
device# show counters interface ethernet brief
           Packets   Error     Discards   CRC
Interface  rx  tx    rx  tx    rx  tx     rx

=======   ========  ========   =======   ======

Eth 1/1    0   0      0   0     0   0     0

Eth 1/2    0   0      0   0     0   0     0

Eth 1/3    0   0      0   0     0   0     0

Eth 1/4    0   0      0   0     0   0     0

Eth 1/5    0   144    0   0     0   0     0
```

show counters interface management

Displays counter information for specified management interface.

Syntax

show counters interface management *number*

Parameters

number

Specifies the management interface by number.

Modes

Exec mode

Examples

The following example shows counters information for management interface 0.

```
device# sh counters interface management 0
Statistics
 Carrier Transitions: 0
           LastClear: 0s
Input:
              Total pkts: 36892
          Broadcast pkts: 2833
            Discard pkts: 0
             Errors pkts: 0
              CRC Errors: 0
              MCast pkts: 32459
                  Octets: 3016973

Out:
              Total pkts: 1793
          Broadcast pkts: 379
            Discard pkts: 0
             Errors pkts: 0
              MCast pkts: 44
                  Octets: 480103
Rate Info:
                   Input: 0.014576 Mbits/sec, 15 pkts/sec 0.00% of line-rate
                  Output: 0.004194 Mbits/sec, 3 pkts/sec 0.00% of line-rate
```

show counters link-fault-signaling

Displays current link-fault-signaling counter information.

Syntax

show counters link-fault-signaling

Modes

Exec mode

Examples

The following example shows link-fault-signaling counter information.

```
device# show counters link-fault-signaling

Port   Local-Fault-Count  Last-Local-Fault   Remote-Fault-Count Last-Remote-Fault
========== ================== ==================== ==================
====================
Eth 1/8:1  2       2021-08-17T18:01:07Z 0       NA
Eth 1/8:2  2       2021-08-17T18:01:07Z 0       NA
Eth 1/8:3  2       2021-08-17T18:01:41Z 0       NA
Eth 1/8:4  2       2021-08-17T18:01:41Z 1       2021-08-17T18:01:25Z
```

show counters transport-tunnel

Displays transport tunnel counters information for the specified transport tunnel.

Syntax

show counters transport-tunnel [*name*| **all**]

Parameters

name

Specifies the tunnel name for displaying transport tunnel counters information.

all

Specifies all transport-tunnel counters.

Modes

Exec mode

Examples

The following example shows transport tunnel counters information for tunnel-1.

```
# show counters transport-tunnel tunnel-1

ERSPAN Terminated Packet Statistics
   RX Frames : 0
    RX Bytes : 0
ERSPAN Dropped Packet Statistics
 Dropped Frames : 0
  Dropped Bytes : 0
```

show crypto ca certificates

Displays CA certificates used by the switch.

Syntax

show crypto ca certificates

Modes

Exec mode

Usage Guidelines

Available to all users

Output includes effective date and certificate identifiers.

Examples

The following example shows installed CA certificate information for the current switch.

```
device# show crypto ca certificates
SHA256

Fingerprint=7F:87:87:28:C1:E3:0B:EF:BB:08:3F:8F:E3:0D:FE:15:D7:79:EA:5C:1E:9A:67:15:C5:E6:
44:32:7B:B4:C2:A8

  Subject: CN=ngnpb.extremenetworks.com

  Issuer: CN=NGNPB Intermediate CA,OU=Extreme
  Networks NextGenNPB,O=Extreme Networks,ST=CA,C=US

    Not Before: Sep 14 17:31:15 2020 UTC
    Not After : Sep 14 17:31:15 2021 UTC
```

show egress

Displays egress operational information for the specified egress or all egresses.

Syntax

show egress [*name* | **all**]

Parameters

name

Specifies the name of the egress for show egress. The egress name supports 1-32 characters. Characters allowed are alpha-numeric, underscore, and dot. Underscore is not allowed as the first character.

all

Specifies all egresses for show egress.

Modes

Exec mode

Usage Guidelines

A valid egress name must be provided.

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows operational egress information for ep1.

```
device# show egress ep1
            Name : ep1
       Description : egress_obj_1
Encap : encap_gre
    Listener Policy : lp1
         Precedence : 10
             Interface : ethernet 1/2
```

The following example show operational information for all configured egresses.

```
device# show egress all
    Name : e1
       Description : egress_obj_1
               Encap : encap_gre
       Listener Policy : v4
         Precedence : 12
               Interface : ethernet 1/9
```

show egress-group

Displays egress group configuration for the specified egress group or all egress-groups.

Syntax

show egress-group [*egress-group-name*| **all**]

Modes

Exec mode

Parameters

`all`

Specifies all egress groups.

egress-group-name

Specifies the egress group name for config show.

Supports 1-32 characters. Characters allowed are alpha-numeric, underscore, and dot. Underscore is not allowed as the first character.

Usage Guidelines

Valid egress-group-name must be provided.

Examples

```
NPB# show egress-group eg1

    Name : eg1
     Description : -
          egress : e1

NPB# show egress-group all
Number of egress-groups: 1

    Name : eg1
     Description : -
          egress : e1
```

show encap

Displays encap information for all or specified encap.

Syntax

show encap [**all** | **encap-name**]

Parameters

all

Displays all encaps.

encap-name

Specifies the name of the encap.

Modes

Exec mode

Usage Guidelines

Valid encap name must be provided.

Examples

The following example shows encap information for encap-1.

```
device# show encap encap-1
 encap encap-1
 encap-type        : erspan
 encap-id        : 123456
 source-ipv4-addr    : 10.10.10.1
 destination-ipv4-addr    : 20.20.20.1
 destination-mac-addr    : 00:01:02:03:04:05
 vlan-id        : 1234
 vlan-pcp        : 6
```

show firmware

Displays the current firmware version and rollback firmware version of the system along with BMC firmware version on hardware.

Syntax

show firmware

Modes

Exec mode

Examples

The following example displays the firmware version information.

```
device# show firmware
Current Firmware Version:        TierraOS-21.1.0.0-NPB-20210608_133912_UTC
Rollback Firmware Version:       TierraOS-21.1.0.0-NPB-20210604_013911_UTC
BMC Firmware Version:            1.21
```

show firmware history

Displays firmware version history.

Syntax

show firmware history

Modes

Exec mode

Examples

The following example shows the last 5 firmware versions on the switch.

```
device# show firmware history

Firmware Version                          Install Date
------------------------------------------------------------------------
device_v21.0.7.0-20210408_012657_UTC     Mon, 12 Apr 2021 14:07:38 UTC
device_v21.0.7.0-20210412_050245_UTC     Mon, 12 Apr 2021 13:58:46 UTC
device_v21.0.7.0-20210408_012657_UTC     Fri, 09 Apr 2021 18:17:22 UTC
device_v21.0.7.0-20210409_012648_UTC     Fri, 09 Apr 2021 18:13:26 UTC
device_v21.0.7.0-20210408_012657_UTC     Fri, 09 Apr 2021 17:56:30 UTC
```

show grpc-server gnmi capabilities

Provides capability information

Syntax

show grpc-server gnmi capabilities

Parameters

capabilities

Display gNMI service version, the versioned data models it supports, and the supported data encoding.

Modes

Exec mode

Usage Guidelines

This information is used in subsequent RPC messages from the client to indicate the set of models that the client can use (GET, SUBSCRIBE, SET) and the encoding to be used for the data.

Examples

The following example shows detail for gNMI capabilities.

```
device# show grpc-server gnmi capabilities
gNMI version: 0.7.0
Supported YANG modules:
Module Name                     Organization                  Version
-------------------------------------------------------------------------------
extreme-acl-ext                 Extreme Networks, Inc.        1.0.0
extreme-acl-ipv4-ext            Extreme Networks, Inc.        1.0.0
extreme-acl-ipv6-ext            Extreme Networks, Inc.        1.0.0
extreme-acl-mac-ext             Extreme Networks, Inc.        1.0.0
extreme-common-types            Extreme Networks, Inc.        1.0.0
extreme-egress-group            Extreme Networks, Inc.        1.0.0
extreme-egress                  Extreme Networks, Inc.        1.0.0
extreme-eth-ext                 Extreme Networks, Inc.        1.0.0
extreme-ingress-group           Extreme Networks, Inc.        1.0.0
extreme-lag-ext                 Extreme Networks, Inc.        1.0.0
extreme-listener-policy         Extreme Networks, Inc.        1.0.0
extreme-lldp-ext                Extreme Networks, Inc.        1.0.0
extreme-pcap                    Extreme Networks, Inc.        1.0.0
extreme-policy-statistics       Extreme Networks, Inc.        1.0.0
extreme-routemap                Extreme Networks, Inc.        1.0.0
extreme-saps                    Extreme Networks, Inc.        1.0.0
extreme-sfcs                    Extreme Networks, Inc.        1.0.0
extreme-sfs                     Extreme Networks, Inc.        1.0.0
extreme-snmp                    Extreme Networks, Inc.        1.0.0
extreme-system-logging-ext      Extreme Networks, Inc.        1.0.0
extreme-transport-tunnel        Extreme Networks, Inc.        1.0.0
extreme-tunnel-encap            Extreme Networks, Inc.        1.0.0
openconfig-acl                  OpenConfig working group      1.0.1
```

```
openconfig-interfaces           OpenConfig working group        2.4.3
openconfig-platform             OpenConfig working group        0.11.0
openconfig-system               OpenConfig working group        0.5.0
openconfig-network-instance     OpenConfig working group        0.10.2
------------------------------------------------------------------------------
Supported Encoding:
PROTO
```

show grpc-server gnmi statistics

Displays gNMI subscription detail.

Syntax

show grpc-server gnmi statistics

Parameters

statistics

Display detail of active gNMI stream subscriptions.

Modes

Exec mode

Usage Guidelines

gNMI stream details include the number of active stream subscriptions and subscription details for client, mode, number of subscribed keypaths, keypath details, and subscription interval.

Examples

show ingress-group

Displays ingress group configuration for the given ingress group or all ingress groups.

Syntax

show ingress-group [*ingress-group-name* | *all*]

Parameters

ingress-group-name

Specifies the name of the ingress group.

all

Specifies all ingress groups.

Modes

Exec mode

Usage Guidelines

Valid ingress-group-name must be provided.

Examples

```
NPB# show ingress-group ig1

    Name : ig1
       Route-Map : rm1
     Description : -
    Traffic-Type : GTPU
       Tunnel-Id : any
            Mode : decap
      Interfaces :  ethernet 1/1

NPB# show ingress-group all
Number of ingress-groups: 1

    Name : ig1
       Route-Map : rm1
     Description : -
    Traffic-Type : GTPU
       Tunnel-Id : any
            Mode : decap
      Interfaces :  ethernet 1/1

NPB# show ingress-group ING1
Error: no ingress-groups found
```

show interface brief

Displays brief information about interfaces in the system.

Syntax

show interface brief

Parameters

interface brief

Displays abbreviated version of interface information.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example shows brief interface information.

```
device# show interface brief

Number of interfaces 20
Name      Mtu     Admin-State   Oper-State  Speed Ifindex
Description
--------------------------------------------------------------------------------
Eth 1/1   9216    DOWN          DOWN        0x10000008    100G ethernet port
Eth 1/2   9216    DOWN          DOWN        0x10000009    100G ethernet port
Eth 1/3   9216    DOWN          DOWN        0x1000000a    100G ethernet port
Eth 1/4   9216    DOWN          DOWN        0x1000000b    100G ethernet port
Eth 1/5   9216    DOWN          DOWN        0x1000000c    100G ethernet port
Eth 1/6   9216    DOWN          DOWN        0x1000000d    100G ethernet port
Eth 1/7   9216    DOWN          DOWN        0x1000000e    100G ethernet port
Eth 1/8   9216    DOWN          DOWN        0x1000000f    100G ethernet port
Eth 1/9   9216    DOWN          DOWN        0x10000010    100G ethernet port
Eth 1/10  9216    DOWN          DOWN        0x10000011    100G ethernet port
Eth 1/11  9216    DOWN          DOWN        0x10000012    100G ethernet port
Eth 1/12  9216    DOWN          DOWN        0x10000013    100G ethernet port
Eth 1/13  9216    DOWN          DOWN        0x10000014    100G ethernet port
Eth 1/14  9216    DOWN          DOWN        0x10000015    100G ethernet port
Eth 1/15  9216    DOWN          DOWN        0x10000016    100G ethernet port
Eth 1/16  9216    DOWN          DOWN        0x10000017    100G ethernet port
Eth 1/17  9216    DOWN          DOWN        0x10000018    100G ethernet port
Eth 1/18  9216    DOWN          DOWN        0x10000019    100G ethernet port
Eth 1/19  9216    DOWN          DOWN        0x1000001a    100G ethernet port
Mgmt 0    1514    UP            UP       1G 0x60000010    Management
```

show interface ethernet

Displays the details of Ethernet interface or range of interfaces.

Syntax

show interface ethernet [**IFNAME** | **all**]

Parameters

IFNAME

Specifies the Ethernet interface or range of interfaces for the show command. For example, 1/1-2,2/1-2,3/2:1-4.

all

Specifies all Ethernet interfaces for the show command.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example displays information pertaining to an Ethernet interface.

```
NPB# show int e 1/2
ethernet 1/2 Admin state UP      Operational state UP
 Interface index is 268435868 (0x1000019c)
 MTU 9000 bytes
 Hardware is Ethernet  mac address
 Current Speed  100G

Statistics
Carrier Transitions: 0
           LastClear: 0s
Input:
              Total Pkts: 570850
           Broadcast Pkts: 3
             Discard Pkts: 0
              Errors Pkts: 0
               FCS Errors: 0
               MCast Pkts: 18
                   Octets: 381845280
               UCast Pkts: 44478
                Runt pkts: 0
               CRC Errors: 0

Input Distribution:
            64 byte pkts: 0
         65-127 byte pkts: 21
        128-255 byte pkts: 0
```

```
       256-511 byte pkts: 0
      512-1023 byte pkts: 0
     1024-1518 byte pkts: 0
              Jumbo pkts: 44478

Out:
              Total Pkts: 0
          Broadcast Pkts: 0
            Discard Pkts: 0
             Errors Pkts: 0
              MCast Pkts: 0
                  Octets: 0
              UCast Pkts: 0

Rate Info:
                   Input: 1680.724704 Mbits/sec, 24426 pkts/sec 1.68% of line-rate
                  Output: 0.000000 Mbits/sec, 0 pkts/sec 0.00% of line-rate
```

show interface management

Displays the details of management interface and the IP address configured on the interface.

Syntax

show interface management *interface-number*

Parameters

management *interface-number*

Specifies the management interface number.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example shows the details of the specified management interface.

```
device# show interface management 0
 management 0 Admin state UP      Operational state UP
 MTU 1514 bytes
 Hardware is Ethernet  mac address d8:84:66:f9:3c:03
 Current Speed  1G
 DHCPv4 Disabled
 IPv4 address 192.168.122.160/24
 IPv4 gateway 192.168.122.1
 DHCPv6 Disabled
 IPv6 address 2001::100/120
 IPv6 gateway 2001::1
Statistics
 Carrier Transitions: 0
Input:
              Total pkts: 424129
          Broadcast pkts: 22621
            Discard pkts: 0
             Errors pkts: 0
              CRC Errors: 0
              MCast pkts: 248183
                  Octets: 227726675
Out:
              Total pkts: 45587
          Broadcast pkts: 2858
            Discard pkts: 0
             Errors pkts: 0
              MCast pkts: 247
                  Octets: 3974088
Rate Info:
                   Input: 0.017180 Mbits/sec, 17 pkts/sec 0.00% of line-rate
                  Output: 0.007562 Mbits/sec, 5 pkts/sec 0.00% of line-rate
```

show interface port-channel

Displays the port-channel information.

Syntax

show interface [**port-channel** *PORANGE* | **brief**]

Parameters

port-channel *PORANGE*

Specifies the channel number or channel number range. The range is 1-255.

port-channel brief

Displays brief information of the port channel interface.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following examples show interface port channel information.

```
device# show interface port-channel 1
port-channel 1 is up
    MTU 9216 Bytes
    IfIndex 0x40000201
    Port mode is Full Duplex, 100 Gb/s
    LagType is Static
    MinLinks is 1
    Load balance method uses Src/Dst IP, Src/Dst L4 port and
      protocol
    Active Members in this channel: Eth 1/1
    Members in this channel: Eth 1/1

Statistics
 Carrier Transitions: 3
           LastClear: 37m48.716951005s
Input:
          Broadcast Pkts: 0
            Discard Pkts: 0
             Errors Pkts: 0
              FCS Errors: 0
              MCast Pkts: 0
                  Octets: 0
              UCast Pkts: 0
       Unknown Protocols: 0
Out:
          Broadcast Pkts: 0
            Discard Pkts: 0
```

```
             Errors Pkts: 0
              MCast Pkts: 0
                  Octets: 0
              UCast Pkts: 0

device# show interface port-channel 1-2,5
port-channel 1 is down
    MTU 9216 Bytes
    IfIndex 0x40000200
    Port mode is Full Duplex, SpeedUnknown
    LagType is Static
    MinLinks is 1
    Load balance method uses Src/Dst IP, Src/Dst L4 port and protocol
    Active Members in this channel: Nil
    Members in this channel: Nil

Statistics
 Carrier Transitions: 0
           LastClear: 0s
Input:
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              FCS Errors: 0
              MCast pkts: 0
                  Octets: 0
              UCast pkts: 0
       Unknown Protocols: 0
Out:
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              MCast pkts: 0
                  Octets: 0
              UCast pkts: 0

port-channel 2 is down
    MTU 9216 Bytes
    IfIndex 0x40000201
    Port mode is Full Duplex, SpeedUnknown
    LagType is Static
    MinLinks is 1
    Load balance method uses Src/Dst IP, Src/Dst L4 port and protocol
    Active Members in this channel: Nil
    Members in this channel: Nil

Statistics
 Carrier Transitions: 0
           LastClear: 0s
Input:
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              FCS Errors: 0
              MCast pkts: 0
                  Octets: 0
              UCast pkts: 0
       Unknown Protocols: 0
Out:
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              MCast pkts: 0
                  Octets: 0
```

```
              UCast pkts: 0
port-channel 5 is down
    MTU 9216 Bytes
    IfIndex 0x40000204
    Port mode is Full Duplex, SpeedUnknown
    LagType is Static
    MinLinks is 1
    Load balance method uses Src/Dst IP, Src/Dst L4 port and protocol
    Active Members in this channel: Nil
    Members in this channel: Nil
Statistics
 Carrier Transitions: 0
           LastClear: 0s
Input:
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              FCS Errors: 0
              MCast pkts: 0
                  Octets: 0
              UCast pkts: 0
       Unknown Protocols: 0
Out:
          Broadcast pkts: 0
            Discard pkts: 0
             Errors pkts: 0
              MCast pkts: 0
                  Octets: 0
              UCast pkts: 0
```

The following example shows error messages.

```
device# show  interface port-channel 7
Error: No Port-Channel found

device# show interface port-channel 10-15
Error: No Port-Channel found

device# show interface port-channel 0
% Value '0' not in range <1-255>.

device# show interface port-channel PORANGE
Error: Port-channel range too long, max 255 char supported
```

```
device# show interface port-channel brief

Number of interfaces 23
Port         Mtu     Admin-State   Oper-State  Speed  Ifindex         Description
-------------------------------------------------------------------------------------------
-------
Po1          9216    DOWN          DOWN        10G    0x40000200    Port-Channel
Interface
Po2          9216    UP            UP          10G    0x40000201    Port-Channel
Interface
Po3          9216    UP            UP          10G    0x40000202    Port-Channel Interface
```

show inventory

Displays the inventory detail for slot cards, power supply units, or both that are currently in use and whose status is UP.

Syntax

show inventory { **slot** | **power-supply** | **all** }

Parameters

slot

Specifies show inventory detail for slot cards.

power-supply

Specifies show inventory detail for power-supply units.

all

Specifies show inventory detail for all slot and power-supply units.

Modes

Exec mode

Examples

The following example displays inventory details for all slot cards.

```
device# show inventory slot
       Module    : Slot-1
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10036
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-2
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10035
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-3
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10034
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15
```

The following example shows all inventory detail for power supply units.

```
device# show inventory power-supply
       Module    : PSU-0
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40007
      Version    : S0F

       Module    : PSU-1
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40014
      Version    : S0F
```

The following example shows inventory detail for all cards and power supplies.

```
device# show inventory all
       Module    : Slot-1
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10036
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-2
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10035
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

       Module    : Slot-3
        Model    : 9920-16C
       PartNo    : 801112-00-04
     SerialNo    : AE022102Y-10034
      Version    : 4
Manufacturer    : Extreme Networks Inc.
     Mfg Date    : Fri Jan 15 09:30:00 2021
    ECVersion    : 15

 Module    : PSU-0
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40007
      Version    : S0F

       Module    : PSU-1
        Model    : 9920-ACPWR-1600W-F
     SystemNo    : 801115-00-01
     SerialNo    : AE042050B-40014
      Version    : S0F
```

show ip access-list

Displays specific IPv4 access control list (ACL), all configured IPv4 access lists, or IPv4 ACLs bound to a route map or listener policy.

Syntax

show ip access-list {*name* | **all** }

show ip access-list all route-map

show ip access-list all listener-policy

Parameters

name

Shows information for the named IPv4 ACL.

all

Shows all configured IPv4 ACLs.

route-map

Shows all IPv4 ACLs bound to a route map.

listener-policy

Shows all IPv4 ACLs bound to a listener policy.

Modes

Exec mode

Usage Guidelines

To display all IPv4 ACLs bound to a route map or listener policy, the route-map and listener policy optional parameters are available.

Examples

The following example shows the configured ACL named IPv4-1.

```
device# show ip access-list IPv4-1
ip access-list IPv4-1
    seq 66 permit tcp any any (0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
    seq 65 permit udp any any (0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
```

The following example shows all configured ACLs and all ACLs bound to a route map or listener policy options..

```
device# show ip access-list all
ip access-list IPv4-1
seq 66 permit tcp any any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )

device# show ip access-list all route-map
```

```
Route map: rm1
  ip access-list v4
    seq 10 permit ip any any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
  ip access-list ip-3
    seq 70 permit udp any any dport 20000 dport-end 20010 sport 10000 sport-end 10010
    ➥( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )

device# show ip access-list all listener-policy
Listener policy: LP1
  ip access-list ip-eg-acl
    seq 10 permit ip any any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
```

show ip dns

Displays the details of IP DNS configuration information.

Syntax

show ip dns

Parameters

ip dns

Specifies the DNS IP address.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example show IP DNS information.

```
device# sh ip dns
ip dns domain name
corp.extremenetworks.com
extremenetworks.com
ip dns name-server
10.6.16.32
10.6.24.30
1111:2222::1
```

show ipv6 access-list

Displays all or specific configured IPv6 access control list (ACL) or IPv6 ACLs bound to a route map or listener policy.

Syntax

show ipv6 access-list { *name* | **all** }

show ipv6 access-list all route-map

show ipv6 access-list all listener-policy

Parameters

name

Specifies the name of IPv6 ACL.

all

Specifies all configured IPv6 ACLs.

route-map

Specifies the name of the route-map.

listener-policy

Specifies the name of the listener-policy.

Modes

Exec mode

Examples

The following example shows settings for the IPv6 access list, IPV6-1.

```
device# show ipv6 access-list IPv6-1
seq 66 permit tcp any any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
```

The following example shows all IPv6 access lists.

```
device# sshow ipv6 access-list all
ipv6 access-list ip6-2
  seq 10 permit gtpu any any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
  seq 20 permit ipv6 2001::1 2001:0::0:1 any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0
Bits/sec )
ipv6 access-list ip6-3
  seq 40 permit ipv6 2002::2 2002:: 2003::3 2003::0 ( 0 Packets, 0 Bytes, 0 Packets/sec,
0 Bits/sec )
```

The following example shows all configured IPv6 access lists bound to a route map.

```
device# show ipv6 access-list all route-map
Route map: rm1
  ipv6 access-list ip6-3
```

```
    seq 40 permit ipv6 2002::2 2002:: 2003::3 2003::0 ( 0 Packets, 0 Bytes, 0 Packets/
sec, 0 Bits/sec )
```

The following example shows all IPv6 access lists bound to a listener policy.

```
device# show ipv6 access-list all listener-policy
Listener policy: LP1
  ipv6 access-list ip6-2
    seq 10 permit gtpu any any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
    seq 20 permit ipv6 2001::1 2001:0::0:1 any ( 0 Packets, 0 Bytes, 0 Packets/sec, 0
Bits/sec )
```

show link-fault-signaling

Displays link-fault-signaling information.

Syntax

show link-fault-signaling

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

This command is not allowed on management interface.

Examples

The following example shows how to configure link-fault-signaling on a device.

```
device(config)# int e 1/1-16,2/1-16

device(config-if-eth-1/1-16,2/1-16)# no link-fault-signaling

devicedevice(config-if-eth-1/1-16,2/1-16)#
```

The following example shows link-fault-signaling information.

```
device# show link-fault-signaling
Port       Link-Fault
========== ===============
Eth 1/1    OFF
Eth 1/2    ON
Eth 1/3    ON
Eth 1/4    ON
Eth 1/5    ON
Eth 1/6    ON
Eth 1/7    ON

Gnmi set on management port –
```

show listener-policy

Displays a list of all or specified listener policies on the device.

Syntax

show listener-policy { *name* | **all** }

Parameters

name

Specifies the name of the configured listener policy.

all

Displays all configured listener policies on the device.

Modes

Exec mode

Examples

The following example shows configuration parameters for the listener policy IPV6.

```
device# show listener-policy IPV6
 listener-policy IPV6 65
 match ipv6 access-list IPv6-1
 truncate 1280 description policy v6 is applied
 Policy matches: 11 packets, 1573 bytes
```

The following example shows all listener policies.

```
device# show listener-policy all
 listener-policy IPV6
 Policy-1
Policy matches: 11 packets, 1573 bytes
```

show logging

Displays logging information.

Syntax

show logging audit [**config** | **firmware** | **security**]

show logging file

show logging id *1-60000*

Parameters

audit

Displays audit logging entries.

config

Displays configuration related log information.

firmware

Displays firmware related log information.

Security

Displays security related log information.

file

Selects file for general log entries.

id *1-60000*

Selects log ID to see the description.

Modes

Exec mode

Examples

The following example shows audit logging firmware information.

```
device# show logging audit firmware
Wed 28 Apr 2021 23:07:27.971 UTC +0000 LogID:5021 Info Msg: Firmware change successful.
Current Firmware Version is NGNPB_v21.0.7.0-20210427_045749_UTC
```

The following example shows logging information for ID 5001.

```
device# NPB# show logging id 5001
Log ID: 5001
  Level         : Fatal
  Message       : Unable to connect to Operational Database
  Probable cause: Database is down
  Remedy        : Check Database status
  Impact        : Service not operational
```

The following example shows audit logging file information.

```
show logging file
2021-04-22 12:17:01.2425 liblogging-stdlog:  [origin software="rsyslogd"
swVersion="8.24.0" x-pid="17744" x-info="http://www.rsyslog.com"] rsyslogd was HUPed
2021-04-22 17:17:02.8468 liblogging-stdlog:  [origin software="rsyslogd"
swVersion="8.24.0" x-pid="17744" x-info="http://www.rsyslog.com"] rsyslogd was HUPed
2021-04-22 21:17:02.3471 liblogging-stdlog:  [origin software="rsyslogd"
swVersion="8.24.0" x-pid="17744" x-info="http://www.rsyslog.com"] rsyslogd was HUPed
--More--
```

The following example shows audit logging configuration information.

```
show logging audit config
Sat 16 Jan 2021 17:02:05.512 UTC +0000 LogID:8001 Info Msg: nouser/norole/none/ssh/cli,
Status:100 Command:'operational assigned to groups:  admin'
Mon 25 Jan 2021 22:52:24.557 UTC +0000 LogID:8001 Info Msg: nouser/norole/none/ssh/cli,
Status:100 Command:'operational assigned to groups:  admin'
Mon 25 Jan 2021 22:57:38.538 UTC +0000 LogID:8001 Info Msg: admin/admin sudo docker/
none/ssh/cli, Status:100 Command:'operational assigned to groups:  admin'
Mon 25 Jan 2021 22:57:42.089 UTC +0000 LogID:8001 Info Msg: admin/admin sudo docker/
none/ssh/cli, Status:0 Command:'operational conf t'
Mon 25 Jan 2021 22:59:34.316 UTC +0000 LogID:8001 Info Msg: admin/admin sudo docker/
none/ssh/cli, Status:0 Command:'configure (config) exit'
Mon 25 Jan 2021 23:18:12.456 UTC +0000 LogID:8001 Info Msg: admin/admin sudo docker/
none/ssh/cli, Status:100 Command:'operational assigned to groups:  admin'
Fri 29 Jan 2021 14:51:42.566 UTC +0000 LogID:8001 Info Msg: nouser/norole/none/ssh/cli,
Status:100 Command:'operational assigned to groups:  admin'

--More--
```

show mac access-list

Displays all or specific MAC ACLs.

Syntax

show mac access-list { *name* | **all** }

show mac access-list all route-map

show mac access-list all listener-policy

Parameters

name

Specifies the name of the MAC ACL or all MAC ACLs and displays a list of MAC ACL rule entries configured for the specified ACL.

all

Displays all MAC ACLS with aggregated stats.

route-map

Displays all MAC ACLS mapped to a route map.

listener-policy

Displays MAC ACLs mapped to a listener policy.

Modes

Exec mode

Examples

The following example shows all MAC ACLs.

```
device# show mac access-list all
mac access-list mac2
  seq 10 permit aa:aa:aa:aa:aa:aa FF:FF:FF:FF:FF:FF any ( 0 Packets,
  ➥0 Bytes, 0 Packets/sec, 0 Bits/sec )

mac access-list mac3
  seq 90 permit gtpu 4294967295 02:02:02:02:02:02 02:02:02:02:02:02 any
  ➥( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
```

The following example shows all ACLs bound to a route map.

```
device# show mac access-list all route-map
Route map: rm1
  mac access-list mac3
    seq 90 permit gtpu 4294967295 02:02:02:02:02:02 02:02:02:02:02:02 any
    ➥( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
```

The following example shows all listener policies bound to a route map.

```
device# show mac access-list all listener-policy
Listener policy: LP1
```

```
mac access-list mac2
  seq 10 permit aa:aa:aa:aa:aa:aa FF:FF:FF:FF:FF:FF any
  ➥( 0 Packets, 0 Bytes, 0 Packets/sec, 0 Bits/sec )
```

show media

Displays detail information about media on the specified interface.

Syntax

show media detected

show media interface ethernet *IFNAME*

show media supported

Parameters

media

detected

Displays media detected in chassis.

interface ethernet *IFNAME*

Displays media information associated with the specified physical interface.

supported

Displays supported media information.

Modes

Exec mode

Usage Guidelines

Channel information is displayed only for supported optics.

Supported passive optics value is 0.

Examples

The following example shows media detected in the chassis.

```
device# show media detected
S/C  Qual  Optical Type   PartNum        Serial Num    Vendor       Description
-------------------------------------------------------------------------------------
--
1/1   No   QSFP28         AA1405031-E6   16CN10300147  Volex Inc.   Volex QSFP media
1/2   No   QSFP28         AA1405031-E6   16CN10300147  Volex Inc.   Volex QSFP media
1/3   No   QSFP28         AA1405031-E6   16CN10300147  Volex Inc.   Volex QSFP media
1/4   No   QSFP28         AA1405031-E6   16CN10300147  Volex Inc.   Volex QSFP media
2/16  No   SFP28          BBA1405031-E6  18CN10300147  Molex Inc.   Molex QSFP media
```

The following example shows detail for ethernet 1/1.

```
device#  show media interface ethernet 4/4
           Interface: ethernet 4/4
                Cage: 4
                Slot: 4
```

```
               Qual: Yes
            Optical: yes
              State: Inserted
        Module Type: QSFP28
        Part Number: 57-1000336-01
      Serial Number: YMJ11645F66002F
             Vendor: BROCADE
        Description: 100G QSFP28 CWDM
           Channels: 4
           Datecode: 161123
Channel[1]:
            Voltage: 3.240000
        Temperature: 39.500000
            RxPower: -1.690000
             TxBias: 24.140000
            TxPower: 0.960000
Channel[2]:
            Voltage: 3.240000
        Temperature: 39.500000
            RxPower: -3.210000
             TxBias: 24.140000
            TxPower: 1.230000
Channel[3]:
            Voltage: 3.240000
        Temperature: 39.500000
            RxPower: -1.430000
             TxBias: 24.130000
            TxPower: 0.020000
Channel[4]:
            Voltage: 3.240000
        Temperature: 39.500000
            RxPower: -2.780000
             TxBias: 24.480000
            TxPower: -1.180000
```

The following command lists the supported media.

```
device# show media supported
Type           PartNum             Vendor              Description
-------------------------------------------------------------------------------------------

qsfp           57-1000129-01       BROCADE             40GBase-SR4 QSFP
qsfp           57-1000263-01       BROCADE             40G QSFPP-LR4 10KM
qsfp           58-0000033-01       BROCADE             40G-QSFP-QSFP 1m cable passive
qsfp           58-0000034-01       BROCADE             40G-QSFP-QSFP 3m cable passive
qsfp           58-0000035-01       BROCADE             40G-QSFP-QSFP 5m cable passive
qsfp           58-0000041-01       BROCADE             40G-QSFP-QSFP 1m Active Copper
qsfp           58-0000042-01       BROCADE             40G-QSFP-QSFP 3m Active Copper
qsfp           58-0000043-01       BROCADE             40G-QSFP-QSFP 5m Active Copper
qsfp           57-1000325-01       BROCADE             40G-QSFP+ LM4
qsfp           57-1000306-01       BROCADE             40G QSFP to QSFP cable 10m AOC
qsfp           57-1000339-01       BROCADE             40G QSFPP BIDI Optic
qsfp           AFBR-79EBPZ         AVAGO               40G QSFPP BIDI Optic
qsfp           AFBR-79EBRZ         AVAGO               40G QSFPP BIDI Receiver Optic
qsfp           58-0000053-01       BROCADE             4x10G QSFPP 5m Active Copper Cable
```

show mirror

Displays the mirror configuration for the given ingress group or for all mirrors.

Syntax

show mirror [*name* | **all**]

Parameters

name

Specifies the name of the mirror.

`all`

Specifies all mirrors.

Modes

Exec mode

Examples

```
device(config)# mirror mirr_1
device(config-mirror)# description mirror-1
device(config-mirror)# set interface ethernet 1/1

device# show mirror mirr_1
                  Name : mirr_1
           Description : mirror-1
             Interface : ethernet 1/1
```

show ntp association

Displays Network Time Protocol (NTP) association information.

Syntax

show ntp association *detail*

Parameters

association *detail*

Displays NTP association information in detail.

Modes

Exec mode

Examples

The following example shows NTP association information.

```
device# show ntp  association

remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
*10.24.12.107    10.6.24.32       2 u  356  512  377    0.731    0.915   0.137

* synced, # selected, + candidate, - outlayer, x falseticker, ~ configured

device# show ntp as d
[detail] display ntp association in detail

device# show ntp association detail

ind assid status conf reach auth condition last_event cnt
===========================================================
1 41294 8011 yes no none reject mobilize 1
2 41295 8011 yes no none reject mobilize 1
3 41296 8011 yes no none reject mobilize 1
4 41297 8011 yes no none reject mobilize 1
```

show ntp status

Displays the Network Time Protocol (NTP) status information.

Syntax

show ntp status

Parameters

status

Displays NTP information.

Modes

Exec mode

Examples

The following example shows NTP status information.

```
device# show ntp status

Clock is synchronized,  stratum 3, reference clock is 10.24.12.107,
precision is -16,
reference time is e35f7b06.7cc6df3e  Wed, Nov 18 2020 10:50:46.487,
clock offset is 0.534396, root delay is 85.256,
root dispersion is 79.806, peer dispersion is 4504,
NTP client mode is enabled

device# show ntp status
Clock is unsynchronized, no reference clock
NTP client mode is disabled
```

show role

Displays all role information.

Syntax

show role

Parameters

role

Displays all role information.

Modes

Exec mode

Examples

The following example shows the defined roles available in the system.

```
device# show role
Role: admin
Type: SYSTEM_DEFINED
Description: Predefined admin role has access to all commands

Role: user
Type: SYSTEM_DEFINED
Description: Predefined user role has access to Show
commands and selected Exec commands
```

show route-map

Displays operational information a configured route map.

Syntax

show route-map [*name* | **all**]

Parameters

name

Specifies the name of the route map.

all

Specifies all configured route maps.

Modes

Exec mode

Output

The **show route-map** command displays match access-list status information, shown in the following examples.

Output field	Description
`match ip access-list acl4 (active)`	`(active)` status indicates that the bound match ACL has been created configured.
`match mac access-list acl2 (pending)`	`(pending)` status indicates that the bound match ACL has not been created or configured.

Examples

The following example shows the route map, `rmap1`.

```
# show route-map rm1
route-map rm1 1
forward-action permit
match ip access-list acl4 (active)
match mac access-list acl2 (pending)
egress-group eg1

Policy matches: 0 packets, 0 bytes, 0 Packets/sec, 0 Bits/sec
```

show running-config aaa

Displays the Authentication, Accounting, and Authorization (AAA) server accounting configuration.

Syntax

show running-config aaa

Modes

Exec mode

Examples

The following example shows the authentication mode.

```
device# show running-config aaa
aaa accounting exec default start-stop tacacs+
aaa accounting commands default start-stop tacacs+
```

show running-config access-list

Syntax

show running-config access-list [*name*]

Parameters

name

Specifies the name of an access-list.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows configuration information for all configured ACLs.

```
device# show running-config access-list
ipv6 access-list ip6-acl
  seq 10 permit ipv6 2001::1 2001::0 2002::2 2002::0

ip access-list ip-acl
  seq 20 permit ip 10.0.0.1 255.0.0.0 20.0.0.2 255.0.0.0

mac access-list L2
```

The following example shows configuration for ip6-acl.

```
device# show running-config access-list ip6-acl
ipv6 access-list ip6-acl
  seq 10 permit ipv6 2001::1 2001::0 2002::2 2002::0
```

show running-config acl-config

Displays the ACL common configuration information.

Syntax

show running-config acl-config

Modes

Exec mode

Examples

The following example shows the authentication mode.

```
device# show running-config acl-config
acl-config
no enable acl-counter
```

show running-config banner

Displays the configured banner message.

Syntax

show running-config banner

Modes

Exec mode

Examples

The following example shows the configured banner message.

```
device# show running-config banner
banner login "This is sample login message"
banner motd "This is sample motd message
```

show running-config clock

Displays the clock time-zone information.

Syntax

show running-config clock

Modes

Exec mode

Examples

The following example shows system clock information.

```
device# show running-config clock
clock timezone Asia/Kolkata
```

show running-config egress

Displays configuration information for configured egress.

Syntax

show running-config egress *name*

Parameters

name

Specifies the name of the egress.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows egress configuration information for ep1.

```
device# show egress ep1
           Name : ep1
       Description : egress_obj_1

Encap : encap_gre
    Listener Policy : lp1
         Precedence : 10
             Interface : ethernet 1/2
```

The following example show configuration information for all configured egresses.

```
device# show egress all
    Name : e1
       Description : egress_obj_1
               Encap : encap_gre
       Listener Policy : v4
         Precedence : 12
               Interface : ethernet 1/9
```

show running-config egress-group

Displays configuration detail for egress groups.

Syntax

show running-config egress-group[*name*]

Parameters

name

Specifies the egress group name.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows configuration information for all configured egress groups.

```
device# show running-config egress-group
egress-group eg_1
  description egress-group_1
  set egress e2
egress-group eg_2
  description egress-group_2
```

show running-config encap

Displays the encap configuration information.

Syntax

show running-config encap

Modes

Exec mode

Examples

The following examples show encap configuration information.

```
device# show running-config encapencap encap1
encap-type gre
source-ipv4-addr 1.1.1.1
destination-ipv4-addr 2.2.2.2
source-mac-addr 00:00:00:11:11:11
destination-mac-addr 00:00:00:22:22:22
vlan-id 100
vlan-pcp 3
```

show running-config ingress-group

Displays ingress-group configuration information.

Syntax

show running-config ingress-group [*name*]

Parameters

ingress-group *name*

Specifies an ingress-group.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows configurations for all configured ingresses.

```
device# show running-config ingress-group
ingress-group ig1
  traffic-type gtpu mode decap
  traffic-type gtpu ip any any
  traffic-type vxlan outer ip any any
  set route-map rm2
ingress-group ig2
  traffic-type gtpu teid 3000 mode new-scope
  traffic-type gtpu ip 10.10.10.1 255.255.255.255 20.20.20.1 255.255.255.255
  traffic-type vxlan outer vni 100
  traffic-type vxlan outer ip any any
  traffic-type vxlan outer mirror m1
  set route-map rm1
ingress-group ig3
  traffic-type gtpu mode decap
  traffic-type gtpu ip 30.30.30.1 255.255.255.255 40.40.40.1 255.255.255.255
  traffic-type vxlan outer ip any any
  set route-map rm2
```

The following example shows configuration for the ingress-group, `ig1`.

```
device# show running-config ingress-group ig1
ingress-group ig1
  traffic-type gtpu mode decap
  traffic-type gtpu ip any any
  traffic-type vxlan outer ip any any
  set route-map rm2
```

show running-config interface

Displays interface config information.

Syntax

show running-config interface

Parameters

interface

Displays the running-configuration section.

ethernet *slot/port*

Specifies the ethernet port in slot/port format.

management *number*

Specifies the management interface number.

port-channel *PORANGE*

Specifies the channel number or channel number range.

Modes

Exec mode

Examples

The following examples show running-config interface.

```
device# show running-config interface ethernet 1/1
interface ethernet 1/1
shutdown
```

```
device# show running-config interface management 0
interface management 0
no ip address dhcp
ip gateway 10.20.73.138
no ipv6 address dhcp
ipv6 address fc00:0:0:12:10:20:73:155/64
ipv6 gateway fc00:0:0:12::1
no shutdown
```

```
show running-config interface port-channel 1
interface port-channel 1
load-balance src-dst-ip-l4port-tid
no shutdown
```

show running-config ip

Displays the IP configuration information.

Syntax

show running-config ip

show running-config ip access-list [**all** | *NAME*]

show running-config ip

Modes

Exec mode

Examples

The following examples show running IP access-list configurations.

```
device# show running-config ip access-list P4
ip access-list P4

device# show running-config ip access-list all
ip access-list P4
```

show running-config ip dns

Displays configuration detail for IP DNS configurations.

Syntax

show running-config ip dns

Modes

Exec mode

Examples

The following example shows configuration detail for all IP domain name servers.

```
device# show running-config ip dns
ip dns domain-name corp.extremenetworks.com
ip dns domain-name extremenetworks.com
ip dns name-server 10.6.16.32
ip dns name-server 10.6.24.30
ip dns name-server 1111:2222::1
```

show running-config ipv6

Displays the IPv6 configuration information.

Syntax

show running-config ipv6

show running-config ipv6 access-list [**all** | *NAME*]

Modes

Exec mode

Examples

The following examples show running IPv6 access-list configurations.

```
device# show running-config ipv6 access-list ip6-acl
ipv6 access-list ip6-acl

device# show running-config ipv6 access-list all
ipv6 access-list ip6-acl
```

show running-config listener-policy

Displays configuration detail of a listener policy for an egress.

Syntax

show running-config listener-policy [*name*]

Parameters

name

Specifies the name of the listener policy.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows the IPv6 listener policy configuration.

```
device# show running-config listener-policy
listener-policy LP1 1
  forward-action permit
  match ip access-list ip1
  truncate 200
  strip vlan-tag
```

show running-config mac

Displays the mac configuration information.

Syntax

show running-config mac

show running-config mac access-list [**all** | *NAME*]

Modes

Exec mode

Examples

The following examples show running MAC access-list configurations.

```
device# show running-config mac access-list L2
mac access-list L2

device# show running-config mac access-list all
mac access-list L2
```

show running-config mirror

Displays the mirror configuration information.

Syntax

show running-config mirror

Modes

Exec mode

The following examples show the mirror configuration.

```
device# show running-config mirror
mirror m1
  description mirror-1
  set interface ethernet 1/4
mirror m2
  description mirror-2
  set interface ethernet 2/4

device# show running-config mirror m1
mirror m1
  description mirror-1
  set interface ethernet 1/4
```

show running-config ntp

Displays the ntp configuration information.

Syntax

show running-config ntp [**server** | **peer**]

Parameters

server

Specifies the NTP server IP address.

peer

Specifies the NTP peer IP address.

Modes

Exec mode

Examples

The following example shows the configured NTP details.

```
device# show running-config ntp
ntp enable
ntp peer 10.12.145.32
ntp server 10.12.145.36
ntp server 10.12.155.42
```

The following examples show the configured NTP peers.

```
device# show running-config ntp peer
ntp peer 10.12.145.32
```

The following examples show the configured NTP servers.

```
device# show running-config ntp server
ntp server 10.12.145.36
ntp server 10.12.155.42
```

show running-config route-map

Displays route-map configuration information for the current system.

Syntax

show running-config route-map *name*

Parameters

name

Specifies the name of the route-map.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows configuration information for rmap1.

```
device# show running-config route-map rmap1
route-map rmap1 10
  forward-action permit
```

The following example shows configuration information for all route-maps.

```
device# show running-config route-map
route-map R1 10
  forward-action permit
  match ip access-list test_1
  set egress-group eg_1
route-map R1 12
  forward-action permit
  match ip access-list test_2
route-map rmap1 10
  forward-action permit
```

show running-config snmp-server

Displays running SNMP configurations on the device.

Syntax

show running-config snmp-server

Modes

Exec mode

Examples

The following example shows all SNMP configurations tried on the device.

```
device# show running-config snmp-server
snmp-server community test123
snmp-server host 1.1.1.1 comm1 162 version 2c

device# show running-config snmp-server
snmp-server user user1 auth md5 auth-key authkey1 priv aes priv-key privkey1
snmp-server user user2 auth sha auth-key authkey2 priv nopriv
snmp-server user user3 noauth
```

show running-config system logging host

Displays logging host configuration details.

Syntax

show running-config system logging host [*name*]

Parameters

name

Specifies hostname or label.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows configuration for all logging hosts on the device.

```
device# show running-config system logging host
system logging host H1
  address 1.1.1.1

system logging host logger
  address 192.168.1.1
  port 514
  transport TCP
  secure-forwarding TLS

system logging host myServer
  address 10.20.30.40
  port 515
device#
```

The following example shows configuration information for the logging host `logger`.

```
device# show running-config system logging host logger
system logging host logger
  address 192.168.1.1
  port 514
  transport TCP
  secure-forwarding TLS
```

show running-config system logging service

Displays configured logging severity levels for microservices.

Syntax

show running-config system logging service NAME *WORD*

Parameters

NAME *WORD*

Specifies the service name.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows the configuration for the chassis service.

```
device# show running-config system logging service chassis-ms
```

show running-config tacacs-server

Display the TACACS+ server configuration.

Syntax

show running-config tacacs-server

Modes

Exec mode

Examples

The following example shows the TACACS+ server configuration.

```
device# show running-config tacacs-server
tacacs-server host 10.24.65.6
     encrypted-key "jahasjikjdoaskjuihuhiaoljsiaknkaiua="
```

show running-config transport-tunnel

Displays the transport tunnel configuration information.

Syntax

show running-config transport-tunnel

Modes

Exec mode

The following examples show transport tunnel configuration.

```
device# show running-config transport-tunnel
transport-tunnel tt1
  tunnel-type gre ipv4-src 10.202.180.10 255.255.255.0
  deny ipv4-dest 103.10.150.225 255.255.255.0
  set ingress-group ig1
transport-tunnel tt2
  tunnel-type gre ipv4-src 10.202.181.10 255.255.255.0
  deny ipv4-dest 103.10.151.225 255.255.255.0
  set ingress-group ig2

device# show running-config transport-tunnel tt1
transport-tunnel tt1
  tunnel-type gre ipv4-src 10.202.180.10 255.255.255.0
  deny ipv4-dest 103.10.150.225 255.255.255.0
  set ingress-group ig1
```

show running-config username

Displays all usernames and role, password, and encryption level for each.

Syntax

show running-config username

Modes

Exec mode

Examples

The following example shows username, role, password, and encryption level for each.

```
device# show running-config username

username testuser1 role admin password $6$salt$cevuzTZ/QBjzuZG0/
ebEeedmcTnhyM8ITUu8K032Cp2XvIibq7voqYagm18bwpLBqrg/l/l6YxTmKKibJz5r10 encryption-level 10

username testuser2 role user password $6$salt$cevuzTZ/QBjzuZG0/
ebEeedmcTnhyM8ITUu8K032Cp2XvIibq7voqYagm18bwpLBqrg/l/l6YxTmKKibJz5r10 encryption-level 10
```

show snmp-server

Displays all SNMP-related information on the device.

Syntax

show snmp-server

Modes

Exec mode

Examples

The following example shows SNMP-related information for the device.

```
device# show snmp-server
snmp-server community test123
snmp-server host 1.1.1.1 comm1 162 version 2c

device# show snmp-server
snmp-server user user1 auth md5 auth-key authkey1 priv aes priv-key privkey1
snmp-server user user2 auth sha auth-key authkey2 priv nopriv
snmp-server user user3 auth noauth
```

show sysinfo all

Displays all system HW component information such as FANs, PSUs, sensors, slots, and LEDs.

Syntax

show sysinfo all

Parameters

all

Displays all hardware information.

Modes

Exec mode

Examples

The following example shows all hardware information.

```
device# show sysinfo all
Fan Information
Id      Status      RPM     Percentage SpeedLevel     Direction
-------------------------------------------------------------------------------
1       Up          7300    41         MEDIUM         FAN_DIR_F2B
2       Up          7300    41         MEDIUM         FAN_DIR_F2B
3       Up          7300    41         MEDIUM         FAN_DIR_F2B
4       Up          7300    41         MEDIUM         FAN_DIR_F2B
5       Up          7300    41         MEDIUM         FAN_DIR_F2B

FAN_DIR_F2B - Fan Airflow Direction is FrontToBack

FanSpeedLevel - <40%[LOW],40-70%[MEDIUM],>70%[HIGH]

Led Information
Id      State     Color     Description
-------------------------------------------------------------
led-0   Solid     GREEN     Power Supply Unit
led-1   Solid     GREEN     Fan
led-2   Solid     GREEN     System Status

PSU Information
Id      Status      Type    C[in]   C[out]  P[in]   P[out]  V[in]   V[out]
-------------------------------------------------------------------------
1       Up          AC      3       53      684     632     206     11
2       Up          AC      3       51      660     612     206     11

**C - Current in Amps ,**P - Power in Watts ,**V - Voltage in Volts
Total power budget for chassis = 3200 Watts
Total power used by LC and system core = 2040 Watts
Total power available = 1160 Watts
Power Board CpldVersion = 00 09
Sensor Information
Id        Name               Current(°C/Volt)    Warning(°C/Volt)    Critical(°C/Volt)
Shutdown(°C/Volt)
-------------------------------------------------------------------------------------
```

```
--------------------
1         CPU Core                37                85
90.00               0.00
2         TF2 MAC                 42.00             75
80                  95.00
3         TF2 Serdes1             56.00             80.00
85.00               95
4         TF2 Serdes2             50.00             80.00
85                  95
5         TF2 Serdes3             54                80.00
85                  95.00
6         TF2 Serdes4             53                80.00
85.00               95
7         LC1 PHY MAX             70.00             115
120.00              125.00
8         LC1 QSFP MAX            38                63.00
68.00               73.00
9         LC2 PHY MAX             67                115.00
120                 125.00
10        LC2 QSFP MAX            38.00             63
68.00               73.00
11        LC3 PHY MAX             66                115.00
120                 125
12        LC3 QSFP MAX            41.00             63.00
68                  73.00
13        LC4 PHY MAX             67                115.00
120.00              125.00
14        LC4 QSFP MAX            40                63.00
68                  73
15        LC5 PHY MAX             67                115.00
120.00              125
16        LC5 QSFP MAX            36                63
68                  73.00
17        LC6 PHY MAX             59.00             115.00
120.00              125.00
18        LC6 QSFP MAX            28.00             63.00
68.00               73.00
19        LC7 PHY MAX             57.00             115.00
120.00              125
20        LC7 QSFP MAX            0.00              63
68.00               73
21        LC8 PHY MAX             64.00             115.00
120.00              125.00
22        LC8 QSFP MAX            44.00             63
68.00               73
23        DIMM1                   36                80
85.00               0
24        DIMM2                   32                80
85.00               0
25        DIMM3                   35                80
85.00               0.00
26        DIMM4                   33.00             80
85.00               0.00
27        SSD                     39.00             75.00
80.00               0.00
28        BMC-12V                 12.00             0
12                  12.00
29        BMC-3_3V                3                 0.00
3.00                3
30        SWB-075V                0                 0
0                   0.00
31        SWB-3_3V                3.00              0.00
3                   3.00
32        SWB-2_5V                2.00              0.00
```

```
2.00                2.00
33        SWB-1_8V                1                   0.00
1.00                1
34        SWB-1_5V                1.00                0.00
1.00                1
35        SWB-1_2V                1.00                0
1                   1.00

Slot Information
Slot  State         FRU-Id  FRU-Type    Description
-----------------------------------------------------------------
1     Online        1       LC16x100G   16x100G QSFP28 Line Card
2     Online        1       LC16x100G   16x100G QSFP28 Line Card
3     Online        1       LC16x100G   16x100G QSFP28 Line Card
4     Online        1       LC16x100G   16x100G QSFP28 Line Card
5     Online        1       LC16x100G   16x100G QSFP28 Line Card
6     Online        1       LC16x100G   16x100G QSFP28 Line Card
7     Online        1       LC16x100G   16x100G QSFP28 Line Card
8     Online        1       LC16x100G   16x100G QSFP28 Line Card
```

show sysinfo fan

Displays all 5 FAN HW component information.

Syntax

show sysinfo fan

Parameters

fan

Displays fan hardware information.

Modes

Exec mode

Examples

Usage Guidelines

The Airflow direction is by default FrontToBack.

The following example shows all hardware information.

```
device# show sysinfo fan

Fan Information
Id     Status      RPM     Percentage SpeedLevel     Direction
-------------------------------------------------------------------------------
1      UP          4300    24         LOW            FAN_DIR_F2B
2      UP          4100    23         LOW            FAN_DIR_F2B
3      UP          4300    24         LOW            FAN_DIR_F2B
4      UP          4300    24         LOW            FAN_DIR_F2B
5      UP          4300    24         LOW            FAN_DIR_F2B

FAN_DIR_F2B - Fan Airflow Direction is FrontToBack
FanSpeedLevel - <40%[LOW],40-70%[MEDIUM],>70%[HIGH]
```

show sysinfo led

Displays the front panel system LED values.

Syntax

show sysinfo led

Parameters

led

Displays system LED status.

Modes

Exec mode

Usage Guidelines

The steady Green LEDs indicate that there are no issues and the steady or blinking Amber LEDs indicate a warning.

Examples

The following example shows system LED status.

```
device# show sysinfo led

Led Information
Id     State     Color     Description
-------------------------------------------------------------
led-0  Solid     GREEN     Power Supply Unit
led-1  Solid     GREEN     Fan
led-2  Solid     GREEN     System Status
```

show sysinfo power-supply

Displays the hardware power supply information.

Syntax

show sysinfo power-supply

Parameters

power-supply

Displays power supply status.

Modes

Exec mode

Examples

The following example configures the vxlan traffic type.

```
device# show sysinfo power-supply

PSU Information
Id     Status      Type    C[in]   C[out]  P[in]   P[out]  V[in]   V[out]
-------------------------------------------------------------------------------
1      UP          AC      2       33      408     130     210     11
2      UP          AC      2       32      424     143     210     11
3      Unplugged   Empty   0       0       0       0       0       0
4      Unplugged   Empty   0       0       0       0       0       0

Total power budget for chassis = 3200 Watts
Total power used by LC and system core = 2040 Watts
Total power available = 1160 Watts
```

show sysinfo sensor

Displays sensor data.

Syntax

show sysinfo sensor [**all** | **cpu** | **lc** | **mem_mod** | **voltage**]

Parameters

all

Displays information for all sensors.

cpu

Displays CPU information.

lc

Displays line card (slot) information.

mem_mod

Displays memory module information.

voltage

Displays voltage information.

Modes

Exec mode

Examples

The following example shows information for all sensors.

```
device# show sysinfo sensor all
Sensor Information
Id        Name               Current(°C/Volt)    Warning(°C/Volt)    Critical(°C/Volt)
Shutdown(°C/Volt)
-------------------------------------------------------------------------------------
1         CPU Core                33                  85
90.00               0
2         TF2 MAC                 41                  75
80                  95.00
3         TF2 Serdes1             56                  80.00
85.00               95
4         TF2 Serdes2             50.00               80.00
85                  95
5         TF2 Serdes3             54.00               80.00
85.00               95
6         TF2 Serdes4             53.00               80
85.00               95.00
7         LC1 PHY MAX             70                  115
120                 125
8         LC1 QSFP MAX            38                  63.00
68.00               73
9         LC2 PHY MAX             67.00               115.00
120.00              125.00
```

```
10        LC2 QSFP MAX            38.00               63.00
68.00               73
11        LC3 PHY MAX             66.00               115.00
120.00              125.00
12        LC3 QSFP MAX            41.00               63.00
68.00               73.00
13        LC4 PHY MAX             67.00               115.00
120.00              125.00
14        LC4 QSFP MAX            40                  63
68                  73
15        LC5 PHY MAX             67                  115
120.00              125.00
16        LC5 QSFP MAX            36                  63.00
68.00               73
17        LC6 PHY MAX             59                  115.00
120.00              125.00
18        LC6 QSFP MAX            28.00               63.00
68                  73.00
19        LC7 PHY MAX             57                  115
120.00              125
20        LC7 QSFP MAX            0.00                63.00
68.00               73.00
21        LC8 PHY MAX             64                  115
120.00              125
22        LC8 QSFP MAX            44.00               63
68.00               73
23        DIMM1                   36                  80.00
85.00               0.00
24        DIMM2                   32                  80.00
85                  0.00
25        DIMM3                   35.00               80.00
85                  0
26        DIMM4                   33.00               80
85.00               0.00
27        SSD                     39                  75
80                  0
28        BMC-12V                 12                  0
12.00               12
29        BMC-3_3V                3.00                0
3.00                3
30        SWB-075V                0                   0.00
0.00                0.00
31        SWB-3_3V                3.00                0
3                   3
32        SWB-2_5V                2                   0
2.00                2.00
33        SWB-1_8V                1.00                0
1                   1.00
34        SWB-1_5V                1                   0.00
1                   1
35        SWB-1_2V                1                   0
1.00                1.00
```

The following example shows CPU information.

```
device# show sysinfo sensor cpu

Sensor Information
Id        Name              Current(°C/Volt)    Warning(°C/Volt)    Critical(°C/Volt)
Shutdown(°C/Volt)
-------------------------------------------------------------------------------------
1         CPU Core                33                  85.00
90.00               0
2         TF2 MAC                 41                  75.00
```

```
80                  95
3         TF2 Serdes1              56.00               80.00
85.00               95
4         TF2 Serdes2              50.00               80
85.00               95.00
5         TF2 Serdes3              54.00               80
85                  95
6         TF2 Serdes4              53.00               80.00
85                  95
```

The following module show line card (slot) information.

```
device# show sysinfo sensor lc

Sensor Information
Id        Name                Current(°C/Volt)    Warning(°C/Volt)    Critical(°C/Volt)
Shutdown(°C/Volt)
-------------------------------------------------------------------------------------
7         LC1 PHY MAX              70                  115.00
120                 125.00
8         LC1 QSFP MAX             38.00               63.00
68                  73.00
9         LC2 PHY MAX              67                  115.00
120                 125.00
10        LC2 QSFP MAX             38.00               63
68.00               73
11        LC3 PHY MAX              66                  115
120.00              125
12        LC3 QSFP MAX             41.00               63.00
68                  73.00
13        LC4 PHY MAX              67                  115
120                 125
14        LC4 QSFP MAX             40.00               63.00
68                  73
15        LC5 PHY MAX              67                  115
120                 125
16        LC5 QSFP MAX             36.00               63
68                  73
17        LC6 PHY MAX              59.00               115.00
120.00              125
18        LC6 QSFP MAX             28.00               63
68                  73.00
19        LC7 PHY MAX              57.00               115.00
120.00              125
20        LC7 QSFP MAX             0.00                63.00
68                  73.00
21        LC8 PHY MAX              64                  115.00
120.00              125.00
22        LC8 QSFP MAX             44                  63.00
68.00               73
```

The following example shows memory module information.

```
device# show sysinfo sensor mem_mod

Sensor Information
Id        Name                Current(°C/Volt)    Warning(°C/Volt)    Critical(°C/Volt)
Shutdown(°C/Volt)
-------------------------------------------------------------------------------------
23        DIMM1                    36                  80
85                  0
24        DIMM2                    32                  80.00
85.00               0.00
25        DIMM3                    35                  80.00
```

```
85.00               0.00
26        DIMM4                   33                  80.00
85.00               0
27        SSD                     39.00               75
80.00               0.00
```

The following example shows voltage information.

```
device# show sysinfo sensor voltage

Sensor Information
Id        Name                Current(°C/Volt)    Warning(°C/Volt)    Critical(°C/Volt)
Shutdown(°C/Volt)
-------------------------------------------------------------------------------------
28        BMC-12V                 12.00               0
12.00               12.00
29        BMC-3_3V                3.00                0
3.00                3.00
30        SWB-075V                0.00                0.00
0                   0
31        SWB-3_3V                3.00                0.00
3.00                3.00
32        SWB-2_5V                2.00                0.00
2                   2.00
33        SWB-1_8V                1                   0.00
1.00                1
34        SWB-1_5V                1.00                0.00
1                   1.00
35        SWB-1_2V                1.00                0
1.00                1.00
36        SWB-1V                  1                   0
1                   1
37        SWB-VCORE               0                   0
0                   0
```

show sysinfo slots

Displays the line card or slot status.

Syntax

show sysinfo slots

Parameters

slots

Displays the slot part type and status information.

Modes

Exec mode

Examples

The following example displays the line card or slot status information.

```
device# show sysinfo slots
Slot Information
Slot  State         FRU-Id  FRU-Type    Description
-------------------------------------------------------------------
1     Initializing  1       LC16x100G   16x100G QSFP28 Line Card
2     Initializing  1       LC16x100G   16x100G QSFP28 Line Card
3     Initializing  1       LC16x100G   16x100G QSFP28 Line Card
4     Initializing  1       LC16x100G   16x100G QSFP28 Line Card
5     Initializing  1       LC16x100G   16x100G QSFP28 Line Card
6     Initializing  1       LC16x100G   16x100G QSFP28 Line Card
7     Initializing  1       LC16x100G   16x100G QSFP28 Line Card
8     Initializing  1       LC16x100G   16x100G QSFP28 Line Card

Slot Information
Slot  State         FRU-Id  FRU-Type    Description
-------------------------------------------------------------------
1     Online        1       LC16x100G   16x100G QSFP28 Line Card
2     Online        1       LC16x100G   16x100G QSFP28 Line Card
3     Online        1       LC16x100G   16x100G QSFP28 Line Card
4     Online        1       LC16x100G   16x100G QSFP28 Line Card
5     Online        1       LC16x100G   16x100G QSFP28 Line Card
6     Online        1       LC16x100G   16x100G QSFP28 Line Card
7     Online        1       LC16x100G   16x100G QSFP28 Line Card
8     Online        1       LC16x100G   16x100G QSFP28 Line Card
```

show system logging host

Displays successfully applied logging host details.

Syntax

show system logging host [*name*]

Parameters

name

Specifies the hostname or label.

Modes

Exec mode

Usage Guidelines

No information displays if the specified host is not found.

Examples

The following example shows logging information for all system logging hosts.

```
device# show system logging host
System Logging Hosts: System Logging Hosts:

HOSTNAME          ADDRESS            PORT    TRANSPORT    SECURE-FORWARDING

-------------------------------------------------------------------------

H1                1.1.1.1             514          UDP                 NONE

logger            192.168.1.1         514          TCP                  TLS

myServer          10.20.30.40         515          UDP                 NONE

NPB#
```

The following example shows logging information for system host `logger`.

```
device# show system logging host logger
System Logging Hosts:
HOSTNAME    ADDRESS     PORT  TRANSPORT  SECURE-FORWARDING
-------------------------------------------------------------------------
logger     192.168.1.1    514    TCP       TLS
```

show system internal

Shows data stored in the specified database in JSON format.

Syntax

show system internal {{ **cdb** | **sdb**| **psdb** } *keypath* }

Parameters

cdb

Specifies data in the config database.

sdb

Specifies data in the state database.

psdb

Specifies data in the persistent state database.

keypath

Specifies a YANG-compliant path.

Modes

Exec mode

Usage Guidelines

Depending on selected Database type and provided keypath, configured data will be showed in JSON format.

If the command is run with a keypath where data is not present in database, a “No Data” message is displayed.

Examples

The following example shows internal config database information for route maps.

```
 NPB# show system internal cdb /routemaps

key /routemaps

{

  "routemap": [

   {

    "name": "rm1",

    "routemap-instances": {

     "routemap-instance": [
```

```
      {
       "config": {
        "egress-group": "est",
        "ipv4-acl": "acl1",
        "permit-deny": true
       },
       "sequence-id": 10
      }
     ]
    }
   }
```

show system logging service

Displays severity level for a specified or all services.

Syntax

show system logging service [**api-gw chassis-mgr interface-agent interface-mgr nexthop-agent packet-mgr pbd-agent pcap-agent pipeline-agent security sfcs-agent snmp svcplane-agent target-proxy-agent**]

Parameters

api-gwapi-gw chassis-mgr interface-agent interface-mgr nexthop-agent packet-mgr pbd-agent pcap-agent pipeline-agent security sfcs-agent snmp svcplane-agent target-proxy-agent

Specifies the service.

Modes

Exec mode

Usage Guidelines

You can run this command without specifying a name to display configuration information for all.

Examples

The following example shows the configured logging severity for all services.

```
device(config)#show system logging service
Service                    Severity
========================== ========
api-gw                     DEBUG
chassis-mgr                DEBUG
interface-agent            DEBUG
interface-mgr              DEBUG
nexthop-agent              DEBUG
packet-mgr                 DEBUG
pbd-agent                  DEBUG
pcap-agent                 DEBUG
pipeline-agent             DEBUG
security                   DEBUG
sfcs-agent                 DEBUG
snmp                       DEBUG
svcplane-agent             DEBUG
target-proxy-agent         DEBUG
```

show system service

Displays all services and corresponding versions.

Syntax

show system service

Modes

Exec mode

Examples

The following example shows all system services.

```
device# show system service

SERVICE               CURRENT    ROLLBACK    READY     STATE      RESTARTS
                      VERSION    VERSION
-------------------------------------------------------------------------
api-gw                 1.0.0      None        true     Running      0
chassis-mgr            1.0.0      None        true     Running      0
cli                    1.0.0      None        true     Running      0
config-db              1.0.0      None        true     Running      0
interface-agent        1.0.0      None        true     Running      0
interface-mgr          1.0.0      None        true     Running      0
lacp                   1.0.0      None        true     Running      0
lldp                   1.0.0      None        true     Running      0
msg-bus                1.0.0      None        true     Running      0
nexthop-agent          1.0.0      None        true     Running      0
packet-mgr             1.0.1      None        true     Running      0
pbd-agent              1.0.0      None        true     Running      0
pcap-agent             1.0.0      None        true     Running      0
persistent-state-db    1.0.0      None        true     Running      0
pipeline-agent         1.0.0      None        true     Running      0
security               1.0.0      None        true     Running      0
sfcs-agent             1.0.0      None        true     Running      0
snmp                   1.0.0      None        true     Running      0
state-db               1.0.0      None        true     Running      0
stratum                0.2.29     None        true     Running      0
svcplane-agent         1.0.0      None        true     Running      0
target-proxy-agent     1.0.0      None        true     Running      0
```

show transport-tunnel

Displays configuration of all or specified transport tunnels.

Syntax

show transport-tunnel [**all** | *tunnel-name*]

Parameters

all

Displays configurations for all configured transport tunnels.

tunnel-name

Specifies the name of the tunnel.

Modes

Exec mode

Usage Guidelines

Valid transport tunnel name must be provided.

Examples

The following example shows configured transport tunnel information for tunnel-1.

```
# show transport-tunnel tunnel-1
name           : tunnel-1
tunnel-type    : erspan
tunnel-id      : 12345
source IP      : 10.10.10.0
source IP mask : 255.255.255.0
dest IP        : 20.20.20.0
dest IP mask   : 255.0.0.0
ingress-group  : ig1
```

show usb

Displays whether USB access is enabled.

Syntax

show usb

Parameters

usb

Specifies the USB storage.

Modes

Exec mode

Examples

The following example displays access status to the USB.

```
device# show usb
USB Enabled: true
```

show users

Displays all active user sessions information.

Syntax

show users

Parameters

users

Displays all active user sessions information.

Modes

Exec mode

Examples

The following example shows the active user sessions in the system.

```
device# show users

Username        Role       Host IP          Device          Time Logged In
=============== ========== ================ =============== ===============
root            admin      -                Console         04:40
admin           admin      192.168.122.1    SSH             04:47
user            user       192.168.122.1    SSH             04:48
```

show version

Displays version information for firmware and services.

Syntax

show version

Modes

User EXEC mode

Examples

```
NPB# show version

NGNPB Operating System Software
Copyright (c) 2020 Extreme Networks Inc.

Firmware Info:
Current Firmware Version:        NGNPB_v21.0.7.0-20210430_082447_UTC
Rollback Firmware Version:       None
BMC Firmware Version:            None
Kernel:                          4.14.49-OpenNetworkLinux

System Uptime:                   0 day(s), 06:41:35

MicroService Info:
SERVICE                      CURRENT       ROLLBACK      READY       STATE
  RESTARTS
                             VERSION       VERSION
-------------------------------------------------------------------------------
--------------
agent-pbd-ms                 0.1.0         None          true        Running
  0
agent-pipeline-ms            0.1.0         None          true        Running
  0
agent-sp-intf-ms             0.1.0         None          true        Running
--More--
```

shutdown

Enables (no shutdown) or disables (shutdown) an interface.

Syntax

shutdown

no shutdown

Modes

Interface config mode

Usage Guidelines

The **no shutdown** command enables the interface.

This command is available only to users with admin role.

Examples

The following example disables the interface.

```
device# configure terminal
device(config)# interface ethernet 1/10
device(config-if-eth 1/10)# shutdown

device(config)# interface ethernet 1/1-5
device(config-if-eth 1/1-5)# shutdown

device# show running interface ethernet 1/10
Interface ethernet 1/10
Shutdown
```

snmp-server community

Configures the SNMP community.

Syntax

snmp-server community *name*

no snmp-server community *name*

Parameters

name

Specifies the community name. Community string must start with a character and can contain only alpha-numeric characters. Valid string range is 2-16 characters.

Modes

Config mode

Usage Guidelines

You must have admin privileges to perform this task.

No more than 256 community strings can be configured.

All configured communities have READ-only permissions.

Examples

The following example configures the extremero community for the SNMP server and confirms the configuration with the show command.

```
device# configure terminal
device(config)# snmp-server community extremero
device(config)# end

device# show snmp-server
snmp-server community extremero
snmp-server host 10.23.17.128 public 162 version 2c
```

The following example removes the extremero SNMP community.

```
device# configure terminal
device(config)# no snmp-server community extremero
```

The following examples show the error messages.

```
device(config)# snmp-server community c
Error: Length should be between 2 and 16 characters

device(config)# snmp-server community c123456789012345678
Error: Length should be between 2 and 16 characters
```

snmp-server host

Configures the agent with the SNMP trap destination information with the community or user-name attached to it.

Syntax

snmp-server { **host** [*ip-address* | *host*] **comm-user** *udp-port* **version** [*1* | *2c* | *3*] }

no snmp-server { **host** [*ip-address* | *host*] **comm-user** }

Parameters

ip-address

Specifies the trap receiver unicast IPv4 or IPv6 address.

host

Specifies the host name of the trap receiver.

comm-user

Specifies the community string associated with SNMP traps. Community string must start with a character and can contain only alpha-numeric characters. Valid string length is 2 through 16 characters.

Supported on SNMP versions 1 and 2c.

udp-port

Specifies the port on which the receiver is listening for SNMP traps. Valid port range is 1 – 65535. Default port is 162.

version [*1* | *2c* | *3*]

Specifies the SNMP version to be used to send SNMP traps. Default version is 2c.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

This command combines a host and community string.

Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

The **[no]** form of the command removes the corresponding configuration.

Examples

The following example configures the SNMP server with the community string using version 2c.

```
device# configure terminal
device(config)# snmp-server host 10.23.17.128 public 162 version 2c

device(config)# do show running-config snmp-server
snmp-server host 10.23.17.128 public 162 version 2c
```

The following example removes the configured host and community string.

```
device# configure terminal
device(config)# no snmp-server host 10.23.17.128 public
```

The following examples show the error messages.

```
ngnpb(config)# snmp-server host 255.255.255.255 public
Error: not a valid unicast address 255.255.255.255

ngnpb(config)# snmp-server host 224.1.1.1 public
Error: not a valid unicast address 224.1.1.1

ngnpb(config)# snmp-server host 1.1.1.1 public 70000 version 2c
% Value '70000' not in range <1-65535>.
```

snmp-server user

Configures the SNMP v3 user for authenticating.

Syntax

snmp-server { **user** [*user name*] **auth** [*noauth* | *md5* | *sha*] **auth-key** [*auth-key*] **priv** [*nopriv* | *aes* | *des*] **priv-key** [*priv-key*] }

Parameters

user *user name*

Specifies the SNMPv3 user name. Valid length is 1 to 32 characters.

auth [*noauth* | *md5* | *sha*]

Specifies the supported authentication method.

auth-key *auth-key*

Specifies the key phrase to be used for authentication. The auth-key string can contain only alpha-numeric characters. Valid string length is 8 to 40 characters.

priv [*nopriv* | *aes* | *des*]

Specifies the supported encryption method.

priv-key [*priv-key*]

Specifies the key phrase to be used for encryption. Valid priv-key length is 8 to 40 characters.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example configures an SNMP server user.

```
device(config)# snmp-server user user8 auth sha auth-key authKey1 priv aes priv-key
user1privkey

device(config)# snmp-server user user2 auth md5 auth-key authkey12 priv nopriv

device(config)# snmp-server user user3 auth noauth
```

source-ipv4-addr

Configures the source IP address for encapsulation of outgoing packets.

Syntax

source-ipv4-addr *ip-addr*

no source-ipv4-addr *ip-addr*

Parameters

source-ipv4-addr *ip-addr*

Specifies the IP address to be configured as source IP.

Modes

Encap config mode

Usage Guidelines

Validations for the command are as follows:

- Valid IP addresses must be provided.
- One IP address per encapsulation is allowed. Already configured IP address must be removed before configuring a new IP address.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Examples

The following example configures the source ipv4 address.

```
device(config-encap-1)# source-ipv4-addr 10.10.10.1
device(config-encap-1)#

Show running:
device# show running-configuration

encap encap-1
source-ipv4-addr 10.10.10.1
```

source-mac-addr

Configures the source MAC address for encapsulation of outgoing packets.

Syntax

source-mac-addr *mac-addr*

no source-mac-addr *mac-addr*

Parameters

source-mac-addr *mac-addr*

Specifies the MAC address to be configured as source MAC.

Modes

Encap config mode

Usage Guidelines

Validations for the command are as follows:

- Valid MAC address must be provided.
- One MAC address per encapsulation is allowed. Already configured MAC address must be removed before configuring a new MAC address.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Table 40: Error messages

`Error: Invalid address as Source MAC address`	MAC address format should be XX:XX:XX:XX:XX:XX
`Error: Source MAC address is already configured`	Single destination MAC address per encapsulation is allowed
`Error: Source and Destination MAC addresses cannot be same`	Source and destination addresses but be different MAC addresses.
`Error: invalid format`	MAC address format should be XX:XX:XX:XX:XX:XX

Examples

The following example configures the source MAC address.

```
device(config-encap)# source-MAC-addr 00:01:02:03:04:05
device(config-encap)#
```

```
Show running:
device# show running-configuration

encap encap-1
destination-mac-addr 00:01:02:03:04:05
```

speed (ethernet interfaces)

Configures the port speed on Ethernet interfaces.

Syntax

speed [**40000** | **100000** | **auto**]

Parameters

40000

Specifies 40 Gbps port speed.

100000

Specifies 100 Gbps port speed.

auto

Specifies auto detection. This is the default port speed.

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported on Ethernet interfaces.

Examples

The following example configures the port speed on Ethernet interfaces.

```
device# configure terminal
device(config)# interface ethernet 2/16
device(config-if-mgmt-0)# speed 40000

device# show running-config interface e 2/16
interface ethernet 2/16
  speed 40000
  shutdown
```

The following examples show error messages.

```
device(config-if-eth-1/2)# speed 10000
Invalid Speed

device(config-if-eth-2/16)# speed 40000
Error: Speed configuration not allowed on interface 2/16 when FEC is configured.
```

speed (management interfaces)

Configures the port speed on management interfaces.

Syntax

speed [**10** | **100** | **auto**]

Parameters

10

Specifies 10 Mbps port speed.

100

Specifies 100 Mbps port speed.

auto

Specifies 1 Gbps port speed with auto negotiation. This is the default port speed.

Modes

Interface config mode

Usage Guidelines

This command is available only to users with admin role.

This command is supported on management interfaces.

Examples

The following example configures the port speed on management interfaces.

```
device# configure terminal
device(config)# interface management 0
device(config-if-mgmt-0)# speed 100

device# show running-config interface management 0
interface management 0
speed 100
no shutdown
```

strip

Removes the specified headers from incoming packets (802.1BR, VN, or VLAN).

Syntax

strip [**br-tag** | **vlan-tag** | **vn-tag**]

no strip [**br-tag** | **vlan-tag** | **vn-tag**]

Parameters

br-tag

Strips 802.1BR tag from the packet header.

vlan-tag

Strips vlan tag from the packet header.

vn-tag

Strips VN tag from the packet header.

Modes

Listener-policy config mode

Usage Guidelines

`vn-tag` cannot be enabled if `br-tag` is already enabled.

The **no strip** command removes the strip configuration.

Table 41: Error messages

Message	Reason
`Error: VN tag strip already enabled for listener policy name when strip br-tag is configured already`	You must configure VN and BR tag-stripping in separate listener policies.
`Error: BR tag strip already enabled for listener policy name when strip vn-tag is configured already`	

Examples

The following example removes the specified headers.

```
device# configure terminal
device(config)# listener-policy lp1 <sId>
device(config-listener-policy)# strip br-tag
device(config-listener-policy)# strip vlan-tag

listener-policy rt 45
  strip br-tag
```

```
  strip vlan-tag

NPB(config-listener-policy)# strip vn-tag
device(config-listener-policy)# strip vn-tag
Error: BR Tag Strip already enabled for listener policy abc

device(config-listener-policy)# strip br-tag
Error: VN Tag Strip already enabled for listener policy abc
```

system firmware commit

Commits the firmware version that is currently running.

Syntax

system firmware commit

Modes

Exec mode

Usage Guidelines

You must have the admin role to run this command.

You cannot commit a previously committed version.

There is no auto-commit after firmware update.

- If you are satisfied with the new update, run this command when the system reboots to commit the new firmware version.
- If the new firmware does not come up properly, you must run the **system firmware rollback** and remove the new image from the device.

Note

It is not necessary to run **system firmware commit** after you run **system firmware rollback**.

Examples

The following example runs the command to accept the running software version.

```
device# system firmware commit
```

system firmware rollback

Rolls back the firmware version to the previous running version.

Syntax

system firmware rollback

Parameters

rollback

Rolls back the firmware version to the previous running version.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example rolls back the firmware version to the previous running version.

```
device# system firmware rollback
```

The following example shows error messages for system firmware rollback.

Invalid firmware rollaback image:

```
device# system firmware rollback
Firmware Rollback is in progress...
Rollback failed with error: Activation failed - Firmware Rollback image not present
```

Pre-install script failure:

```
# system firmware update http://1.1.1.1:8000/home/test/TierraOS-21.1.1.0-NPB.bin
Activate failed with error: Activation failed -  PreInstall script failed with exit
status 1
```

system firmware update

Updates the system firmware.

Syntax

system firmware update FLASH-FILE

system firmware update USB-FILE

system firmware update SCP-FILE

system firmware update SFTP-FILE

system firmware update HTTP-FILE

system firmware update HTTPS-FILE

Parameters

FLASH-FILE

Specifies the flash file path in format `flash://firmware/filename`.

USB-FILE

Specifies the USB file path in format `usb://file-name`.

SCP-FILE

Specifies the SCP file path in format `scp://username:password@host[:port]/filepath`.

SFTP-FILE

Specifies the SFTP file path in format `sftp://username:password@host[:port]/filepath`.

HTTP-FILE

Specifies the HTTP file path in format `http://[username:password@]host[:port]/filepath`.

HTTPS-FILE

Specifies the HTTPS file path in format `https://[username:password@]host[:port]/filepath`.

username

Account name of the authorized user.

password

Password of the authorized user.

Note

As a best practice, do not list the password in the command line for security purposes. The user will be prompted for the password.

hostname

Specifies the server by name or IP address. Both IPv4 and IPv6 are supported.

Hostname usage requires that DNS resolution is configured on the device.

port

Specifies the port number, which must be preceded by a colon. If the port is not included, the default port is assumed.

filepath

Specifies the path to the file.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Host IP must be in the format of a valid IPv4 address.

Firmware images are `.bin` files with the version format, `YearBorn.Major.Minor.Patch`.

There is no auto-commit after firmware update.

- After the firmware update, use the **`system firmware commit`** command to commit the new firmware version.
- Use the **`system firmware rollback`** command to remove the new image from the device.

Examples

The following examples update the system firmware.

```
device# system firmware update system firmware update flash://firmware/TierraOS-21.1.1.0-
NPB.bin

device# system firmware update usb://TierraOS-21.1.1.0-NPB.bin

device# system firmware update http://1.1.1.1:8000/path/TierraOS-21.1.0.0-NPB.bin

device# system firmware update scp://test:pass@1.1.1.1/path/TierraOS-21.1.0.0-NPB.bin

device# system firmware update sftp://test:pass@1.1.1.1/path/TierraOS-21.1.0.0-NPB.bin
```

The following examples show error messages for system firmware update.

Invalid URL format:

```
device# system firmware update temp.bin
temp.bin is not a valid URL format

Usage:
usb://<filename>
flash://firmware/<filename>
scp://<username>:<password>@<host>[:port]/<filepath>
sftp://<username>:<password>@<host>[:port]/<filepath>
```

```
http://[username:password@]<host>[:port]/<filepath>
https://[username:password@]<host>[:port]/<filepath>
```

Invalid host name or IP address:

```
device# system firmware update http://test.example.com:8000/home/test/filename.bin
Error: No such host test.example.com

# system firmware update http://1.1.1.1:8081/home/test/filename.bin
Error: Host IP not reachable
```

Invalid image file name:

```
device# system firmware update http://test.example.com:9000/home/test/filename.bin
Error: Input File does not exist
```

Invalid user credentials:

```
device# system firmware update scp://test:test@1.1.1.1/home/test/filename.bin
Error: Invalid user credentials
```

Invalid file type:

```
device# system firmware update scp://test:test@1.1.1.1/home/test/abc.txt
Error: File abc.txt is not the correct format for firmware images
```

Firmware version already installed:

```
device# system firmware update http://1.1.1.1:8000/home/test/TierraOS-21.1.0.0-NPB.bin
Activate failed with error: Activation failed -  version TierraOS-21.1.0.0-NPB is already
running
```

Checksum mismatch:

```
device# system firmware update http://1.1.1.1:8000/home/test/TierraOS-21.1.0.0-NPB.bin
Activate failed with error: Activation failed -  Checksum mismatch for /var/data/
firmware/ TierraOS-21.1.0.0-NPB.bin
```

Invalid firmware directory:

```
device# system firmware update flash://ms-images/TierraOS-21.1.1.0-NPB.bin
Firmware files should be in firmware directory and Microservices in ms-images directory
```

Pre-install script failure:

```
device# system firmware update http://1.1.1.1:8000/home/test/TierraOS-21.1.1.0-NPB.bin
Activate failed with error: Activation failed -  PreInstall script failed with exit
status 1
```

Downgrade validation failure:

```
device# system firmware update http://1.1.1.1:8000/home/test/TierraOS-21.1.1.0-NPB.bin
Activate failed with error: Activation failed -  Downgrade validator failed with exit
status 1
```

DB conversion failure:

```
device# system firmware update http://1.1.1.1:8000/home/test/TierraOS-21.1.0.0-NPB.bin
Activate failed with error: Activation failed -  DB conversion failed with exit status 1
```

Invalid image file:

```
device# system firmware update flash://firmware/TierraOS-21.1.1.0-NPB.bin
File flash://firmware/TierraOS-21.1.10-NPB.bin does not exist
```

USB not enabled:

```
device# system firmware update usb://TierraOS-21.1.1.0-NPB.bin
Error: USB not enabled
```

system logging host

Enters into a sub-configuration mode for logging host parameter configuration.

Syntax

system logging host *hostname* **address** *ip-address* **port** *port-number*
transport { *udp* | *tcp* } **secure-forwarding** { *tls* | *none* }

no system logging host *hostname*

Command Default

Default transport protocol: UDP

Default secure-forwarding encryption (host): none

Parameters

hostname

Specifies the name or label of the host. Valid length is 1 though 64 characters.

ip-address

Specifies the IP address for the host. Valid format is IPv4 dotted-decimal notation.

port-number

Specifies the number of the port number of the remote syslog server. Valid port-number range is 514 through 530.

udp

Sends syslogs to remote server using UDP protocol. This is the default protocol.

tcp

Sends syslogs to remote server using TCP protocol.

tls

Sends Syslogs to remote server using TLS encryption. Syslog CA certificates must be installed before configuring TLS encryption.

none

Sends Syslogs in plain text. This is the default configuration for the host.

Modes

Exec mode

Usage Guidelines

You can configure a maximum of 10 logging hosts.

If the `no` version of the command is without the *hostname* option, all hosts are removed.

Syslog CA certificates must be installed before configuring TLS encryption.

Syslog CA certificates can be imported using the **`crypto import`** command.

Table 42: Error messages

Message	Reason
`Host name is too long! Max limit is 64 characters`	Hostname cannot be longer than 64 characters. Example: `device(config)# system logging host 12g3e2783etg82713eg823ge8723ge2b23bge32gbdg23ed3hi1nxriu2n13ir32rbxjewbfjbfjbfxbqefxbqwkefnwefw`
`% Command incomplete.`	Hostname must be specified. Example: `device(config)# system logging host`
`Error(-5): Syslog CA certificate not found! Please use crypto command to import CA certificate`	You must import the before attempting to configure TLS encryption.

Examples

The following example configures the host H1 as the system logging host and uses the show command to confirm the configuration.

```
device# configure terminal
device(config)# system logging host sysLogHost1
device(config-logging-host-sysLogHost1)# address 10.25.125.5
device(config-logging-host-sysLogHost1)# port 6154
device(config-logging-host-sysLogHost1)# transport TCP
device(config-logging-host-sysLogHost1)# secure-forwarding TLS

device# do show running-config system logging host
system logging host sysLogHost1
  address 10.25.125.5
  port 6514
  transport TCP
  secure-forwarding TLS
```

The following example configures transport TCP.

```
device(config-logging-host-H1)# transport TCP
Warning: Existing Host configuration changed

device(config-logging-host-h1)# transport xyz
Error(-1): Invalid parameter

device(config-logging-host-h1)# transport TCPU
Error(-1): Invalid parameter
```

The following example removes all system logging hosts.

```
device# configure terminal
device(config)# no system logging host
```

system logging service severity

Sets the logging level of a microservice.

Syntax

system logging service *service-name*{ **chassis-ms** | **ifmgr-ms** | **mgmt-security** | **mgmt-snmp-agent** | **mgmtsvc-apigw** | **pktmgr-ms** } **severity** { **alert** | **critical** | **emergency** | **error** | **warning** | **notice** | **info** | **debug** | **trace** }

no system logging service *service-name*

Command Default

Default log level is DEBUG.

Parameters

service-name

Specifies that name of the service on which to set a logging level.

level

Specifies the logging level for the specified service

Modes

Config mode

Usage Guidelines

Service name must be valid.

Examples

The following example configures severity logging level for chassis-ms and for ifmgr-ms.

```
device# configure terminal
device(config)# system logging service chassis-ms severity error
device(config)# system logging service ifmgr-ms severity trace
```

system service rollback

Restores the specified system service to the previous running version.

Syntax

system service rollback *service-name*

Command Default

Parameters

service-name

Specifies the name of the service to restore.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

Examples

The following example restores the previous running version of the chassis-ms service.

```
device# system service rollback chassis-ms
```

The following examples show error messages for system service rollback.

Invalid service name:

```
device# system service rollback temp
Service Rollback is in progress...
Rollback for temp failed. Current version: 0.0.0, Error: Invalid Microservice Name
```

Missing rollback version:

```
device# system service rollback chassis-ms
Service Rollback is in progress...
Rollback for chassis-ms failed. Current version: 0.1.0, Error: No Rollback versions
present for chassis-ms
```

system service update

Updates the service to a different version with minimal downtime.

Syntax

system firmware update FLASH-FILE

system firmware update USB-FILE

system firmware update SCP-FILE

system firmware update SFTP-FILE

system firmware update HTTP-FILE

system firmware update HTTPS-FILE

Parameters

FLASH-FILE

Specifies the flash file path in format `flash://ms-images/filename`.

USB-FILE

Specifies the USB file path in format `usb://filename`.

SCP-FILE

Specifies the SCP file path in format `scp://username:password@host[:port]/filepath`.

SFTP-FILE

Specifies the SFTP file path in format `sftp://username:password@host[:port]/filepath`.

HTTP-FILE

Specifies the HTTP file path in format `http://[username:password@]host[:port]/filepath`.

HTTPS-FILE

Specifies the HTTPS file path in format `https://[username:password@]host[:port]/filepath`.

username

Account name of the authorized user.

password

Password of the authorized user.

Note

As a best practice, do not list the password in the command line for security purposes. The user will be prompted for the password.

hostname

Specifies the server by name or IP address (IPv4/IPv6). Only valid unicast IP addresses are supported, multicast IP addresses are not supported.

Hostname usage requires that DNS resolution is configured on the device.

port

Specifies the port number, which must be preceded by a colon. If the port is not included, the default port is assumed.

filepath

Specifies the path to the file.

Modes

Exec mode

Usage Guidelines

Service images are `tar.gz` files with the version format, `major.minor.patch`.

Validations for the command are as follows:

- This command is available only to users with admin role.
- The target destination must be valid and reachable.
- The *major.minor* version numbers must be identical between the current and new images.

Examples

The following example updates system service.

```
device# system service update flash://ms-images/chassis-mgr_1.1.0.tar.gz

device# system service update usb://chassis-mgr_1.1.0.tar.gz

device# system service update scp://test:pass@1.1.1.1/home/test/chassis-ms.tar.gz

device# system service update sftp://test:pass@1.1.1.1/home/test/ifmgr-ms.tar.gz

device# system service update http://1.1.1.1:8000/home/test/pktmgr-ms.tar.gz
```

The following examples show error messages for system service update.

Invalid URL format:

```
device# system service update temp.tar.gz
temp.tar.gz is not a valid URL format

Usage:
usb://<filename>
flash://ms-images/<filename> for service update
scp://<username>:<password>@<host>[:port]/<filepath>
sftp://<username>:<password>@<host>[:port]/<filepath>
http://[username:password@]<host>[:port]/<filepath>
https://[username:password@]<host>[:port]/<filepath>
```

Invalid host name or IP:

```
device# system service update http://test.example.com:8000/home/test/chassis-ms.tar.gz
Error: No such host test.example.com
device# system service update http://1.1.1.1:8081/home/test/pktmgr-ms.tar.gz
Error: Host IP not reachable
```

Invalid credentials:

```
device# system service update scp://test:test@1.1.1.1/home/test/chassis-ms.tar.gz
Error: Invalid user credentials
```

Invalid file type:

```
device# system service update scp://test:test@1.1.1.1/home/test/abc.txt
Error: File abc.txt is not the correct format for service images
```

Service version is already running:

```
device# system service update http://1.1.1.1:8000/home/test/chassis-ms.tar.gz
Service update failed.  Current Version: 1.0.0, Error: Current version is already running
```

Major and minor versions mismatch between the current and new image:

```
device# system service update http://1.1.1.1:8000/home/test/chassis-ms.tar.gz
Service update failed. Major/Minor version mismatch.  Current version: 1.0.0, New
version: 1.1.0
```

Invalid firmware directory:

```
device# system service update flash://firmware/chassis-mgr_1.1.0.tar.gz
Firmware files should be in firmware directory and Microservices in ms-images directory
```

Invalid file:

```
device# system service update flash://ms-images/chassis-mgr_1.1.0.tar.gz
File flash://ms-images/chassis-mgr_1.1.0.tar.gz does not exist
```

USB not enabled:

```
device# system service update usb://chassis-mgr_1.1.0.tar.gz
Error: USB not enabled
```

tacacs-server

Configures a Terminal Access Controller Access-Control System plus (TACACS+) server.

Syntax

tacacs-server host *ip address* { *plain-key* | *encrypted-key* }

no tacacs-server host *ip address* **no key**

Parameters

host

Specifies the IPv4/IPv6 address of the TACACS+ server.

plain-key

Specifies a secret string shared with the TACACS+ server in plain-text format. Valid key length is 1 through 40 characters.

encrypted-key

Specifies a secret string shared with the TACACS+ server in encrypted format. Valid key must less than 128 characters.

Modes

Config mode

Usage Guidelines

No more than 5 TACACS servers can be configured.

The following list shows non-configurable default settings:

```
DefaultPort = 49
DefaultTimeout = 5
DefaultRetries = 3
Protocol = "CHAP"
```

Use the **[no]** form of the command to remove the configuration.

Examples

The following example configures a TACACS+ server with an encrypted key.

```
device# configure terminal
device(config)# tacacs-server host 10.24.15.201
device(config-tacacs-config)# encrypted-key QjQkJLQUF3ncI1ooQCOaoEsBn5epVI3GsQwFD6i_BW
device# show running-config tacacs-server
tacacs-server host 10.2.3.5
   key zgR4B-sop6rYJdrp5zmg3zDKx_N-LKQF8ubf4OWuYGo
```

```
device# configure terminal
device(config)# tacacs-server host 10.24.15.201
device(config-tacacs-config)# plain-key testKey
```

The following example shows information about configured TACAC+ servers.

```
device# show running tacacs-server
tacacs-server host 1.2.3.4
   encrypted-key JMeYDVdBN4Vb-wx35d7HnXIE8BL9KLUcEcePFwMNGoo
tacacs-server host 10.20.73.134
   encrypted-key QjQkJLQUF3ncI1ooQCOaoEsBn5epVI3GsQwFD6i_BWw
tacacs-server host 10.24.15.200
   encrypted-key  aimBmdAKcaduyaPNfE68IiWGEYOMywtFxVv8Ftu5bqc
```

The following example removes the encrypted key from the server.

```
device(config)# tacacs-server host 10.24.15.201
device(config-tacacs-config)# no encrypted-key
```

The following examples show error messages.

Invalid IP address:

```
Error: not a valid unicast address
```

Plain key length is more than 40:

```
Error: Plain-key length restriction
```

Encrypted key length is more than 128:

```
Error: encrypted-key length restriction
```

traceroute

Sends ICMP echo requests with increasing TTL value to the specified IP.

Syntax

traceroute [[**IPADDR** | **NAME**] | [**ipv6** [**IPADDR** | **NAME**]] [**max-ttl** *1-255* | **min-ttl** *1-255* | **timeout** *1-60*]

Parameters

IPADDR

Specifies the destination IPV4 or IPV6 address.

NAME

Specifies the destination host name.

max-ttl *1-255*

Specifies the maximum TTL, number of hops. Valid range is 1-255, default is 30.

min-ttl *1-255*

Specifies the minimum TTL, number of hops. Valid range is 1-255, default is 1.

timeout *1-60*

Specifies the timeout value in seconds. The range 1-60, default is 5 seconds.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

This command is also supported on gNOI.

Examples

The following example sends ICMP echo requests.

```
device# traceroute 172.217.165.132

traceroute to 172.217.165.132 (172.217.165.132), 30 hops max, 60 byte packets
1 host.internal (10.42.0.1) 0.053 ms 0.020 ms 0.018 ms
2 10.20.73.129 (10.20.73.129) 0.330 ms 0.458 ms 0.478 ms
3 10.22.3.6 (10.22.3.6) 0.897 ms 1.675 ms 1.751 ms
4 10.22.3.17 (10.22.3.17) 0.950 ms 1.752 ms 1.746 ms
5 10.22.3.13 (10.22.3.13) 8.126 ms 8.143 ms 8.199 ms
6 10.254.127.58 (10.254.127.58) 3.409 ms 0.499 ms 0.578 ms
7 134.141.55.25 (134.141.55.25) 0.497 ms 0.552 ms 0.542 ms
8 208.185.247.161.IPYX-150368-ZYO.zip.zayo.com (208.185.247.161) 1.078 ms 1.228 ms 1.009
ms
9 100.ge-11-3-4.mpr3.sjc7.us.zip.zayo.com.zip.zayo.com (208.185.247.73) 0.673 ms 0.663
ms 0.656 ms
```

```
10 ae16.cr1.sjc2.us.zip.zayo.com (64.125.31.12) 4.104 ms 4.126 ms 4.237 ms
11 ae27.cs1.sjc2.us.eth.zayo.com (64.125.30.230) 3.512 ms 3.487 ms 5.108 ms
12 * * *
13 142.250.160.46 (142.250.160.46) 2.449 ms 2.440 ms 2.451 ms
14 209.85.243.50 (209.85.243.50) 2.209 ms 2.188 ms 2.180 ms
15 108.170.242.83 (108.170.242.83) 2.827 ms 2.846 ms 2.935 ms
16 142.250.234.137 (142.250.234.137) 2.722 ms 2.865 ms 2.858 ms
17 142.250.237.172 (142.250.237.172) 9.852 ms 9.826 ms 9.870 ms
18 * 142.250.235.172 (142.250.235.172) 51.634 ms *
19 * * *
20 216.239.57.137 (216.239.57.137) 68.178 ms * *
21 108.170.226.122 (108.170.226.122) 67.973 ms 66.627 ms 66.614 ms
22 108.170.248.1 (108.170.248.1) 67.274 ms 67.365 ms 67.498 ms
23 142.250.224.245 (142.250.224.245) 67.081 ms 67.077 ms 67.100 ms
24 172.217.165.132 (172.217.165.132) 67.678 ms 66.427 ms 66.502 ms

device# traceroute -6 www.google.com

traceroute to www.google.com (2404:6800:4004:808::2004), 30 hops max, 80 byte packets
1 2001:2e8:665:0:2:2:0:1 (2001:2e8:665:0:2:2:0:1) 0.100 ms 0.052 ms 0.066 ms
2 2001:2e8:22:204::2 (2001:2e8:22:204::2) 1.123 ms 1.082 ms 1.089 ms
3 2001:2e8:20::22:11 (2001:2e8:20::22:11) 1.712 ms 1.603 ms 1.522 ms
4 2001:3e0:5001:12::1 (2001:3e0:5001:12::1) 6.361 ms 6.278 ms 6.386 ms
5 2001:7fa:7:1:0:1:5169:1 (2001:7fa:7:1:0:1:5169:1) 1.367 ms 1.346 ms 1.235 ms
6 2001:4860:0:1002::1 (2001:4860:0:1002::1) 1.675 ms * *
7 * * *
8 nrt20s08-in-x04.1e100.net (2404:6800:4004:808::2004) 1.718 ms 1.602 ms 1.553 ms
```

The following examples show error messages.

```
device# traceroute 255.255.255.255
Error: Broadcast address not allowed

device# traceroute abcd
Error: Host resolution failed
```

traffic-type

Configures or removes the specific header type to be matched for traffic classification.

Syntax

traffic-type { **gre** | **ipip** } { **mode** [**new-scope** | **decap**] }

no traffic-type [**gre** | **ipip**] **mode**

traffic-type gtpu teid *teid-value* { **mode** [**new-scope** | **decap**] }

no traffic-type gtpu [**teid** | **mode**]

traffic-type nvgre vsid *vsid-value* { **mode** [**new-scope** | **decap**] }

no traffic-type nvgre [**vsid** | **mode**]

traffic-type vxlan vnid *vnid-value* { **mode** [**new-scope** | **decap**] }

no traffic-type vxlan [**vnid** | **mode**]

Parameters

[**gre** | **gtpu teid** *teid-value* | **ipip** | **nvgre vsid** *vsid-value* | **vxlan vnid** *vnid-value*]

Specifies the header to be matched for classifying the packet.

Valid vsid range is 4096-16777214. The vsid range 1-4095 and VSID value 16777215 are reserved and not configurable.

Valid VNI range is 1-16777215.

Valid TEID range is 1-4294967295.

mode

Specifies the actions for matching packets.

decap

Removes the encapsulated header.

new-scope

Shifts the scope of headers to inner headers for further processing.

Modes

Ingress-group config mode

Usage Guidelines

Validations for the command are as follows:

- This command is available only to users with admin role.
- Valid decapsulation type and corresponding ID must be provided.
- Only one traffic type per ingress group is allowed.

- The configured traffic type must be removed before configuring a new traffic type.
- Existing traffic type cannot be configured again with a different ID or scope.
- The mode of the existing traffic type can be deleted, but cannot be modified. The existing mode must be removed and reconfigured with the new mode.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- The `[no]` form of the command removes both traffic type and mode even if the mode is not specified.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Examples

The following examples configure traffic types `gre` and `ipip` with `decap` and `new-scope` modes.

```
device(config)# ingress-group ing-1
device(config-ingress-group)# traffic-type gre mode decap
device(config-ingress-group)# end

device# show running-config ingress-group ing-1
ingress-group ing-1
traffic-type gre mode decap

device(config-ingress-group)# traffic-type ipip mode new-scope

Show running:
device# show running-configuration ingress-group ing-1
ingress-group ing-1
traffic-type ipip mode new-scope
```

The following example configures `gtpu` traffic type with `decap` mode.

```
device(config-ingress-group)# traffic-type gtpu teid 3000 mode decap
device(config-ingress-group)# end

device# show running-config ingress-group ing
ingress-group ing
  traffic-type gtpu teid 3000
  traffic-type gtpu ip any any

device# conf t
device(config)# ingress-group ing
device(config-ingress-group)# no traffic-type gtpu teid
device(config-ingress-group)# traffic-type gtpu teid 5000 mode decap

show ingress-group ing

            Name : ing
             Route-Map : -
          Description : -
            Interfaces : none
         Traffic-Type : GTPU
            Tunnel-Id : 5000
                 Mode : decap
   Destination-ip-addr : any
        Source-ip-addr : any

device# show running-config ingress-group
```

```
ingress-group ing
  traffic-type gtpu teid 5000 mode decap
  traffic-type gtpu ip any any

device# conf t
device(config)# ingress-group ing
device(config-ingress-group)# no traffic-type gtpu teid
device(config-ingress-group)# end
device# show running-config ingress-group

ingress-group ing
  traffic-type gtpu mode decap
  traffic-type gtpu ip any any
```

The following example configures `nvgre` traffic type with `decap` mode.

```
device(config-ingress-group)# traffic-type nvgre vsid 7000 mode decap
device(config-ingress-group)# end

device# show running-config ingress-group ing

ingress-group ing
               Name : ing
          Route-Map : -
        Description : -
         Interfaces : none
       Traffic-Type : NVGRE
          Tunnel-Id : 7000
               Mode : decap
 Destination-ip-addr : any
      Source-ip-addr : any

device# show running-config ingress-group

ingress-group ing
  traffic-type nvgre vsid 7000 mode decap
  traffic-type nvgre ip any any

device# conf t
device(config)# ingress-group ing
device(config-ingress-group)# no traffic-type nvgre mode
device(config-ingress-group)# end

device# show running-config ingress-group

ingress-group ing
  traffic-type nvgre vsid 7000
  traffic-type nvgre ip any any
```

The following example configures the `vxlan` traffic type with `decap` mode.

```
device(config-ingress-group)# traffic-type vxlan vni 2000 mode decap
device(config-ingress-group)# end

device# show running-config ingress-group ing
    Name : ing
          Route-Map : -
        Description : -
         Interfaces : none
       Traffic-Type : VxLAN
          Tunnel-Id : 2000
               Mode : decap
 Destination-ip-addr : any
```

```
        Source-ip-addr : any

device# show running-config ingress-group
  ingress-group ing
  traffic-type vxlan vni 2000 mode decap
  traffic-type vxlan ip any any

device(config)# ingress-group ing
device(config-ingress-group)# no traffic-type vxlan vni
device(config-ingress-group)# end

device# show running-config ingress-group
  ingress-group ing
  traffic-type vxlan mode decap
  traffic-type vxlan ip any any
```

The following examples show error messages.

Mode already configured:

```
Error: Mode is already configured for this traffic-type
```

Traffic type already configured:

```
Error: Traffic type is already configured, can't set different tunnel on same ingress-
group ing

Error: Traffic-type information already configured for ingress group
```

Mode and/or IDs are already configured:

```
Error: Mode and tunnel-id already configured for this traffic-type

Error: Tunnel-id is already configured for this traffic-type

Error: Mode is already configured for this traffic-type
```

Invalid VNI:

```
device(config-ingress-group)# traffic-type vxlan vni 0
-----------------------------------------------------------^
%Error: Value '0' not in range <1-16777215>.

device(config-ingress-group)# traffic-type vxlan vni 16777216
-----------------------------------------------------------^
%Error: Value '16777216' not in range <1-16777215>.

device(config-ingress-group)# traffic-type vxlan vni abc
-----------------------------------------------------------^
%Error: Unexpected token 'abc'.
```

Invalid vsid:

```
device(config-ingress-group)# traffic-type nvgre vsid 4000
-----------------------------------------------------------^
%Error: Value '4000' not in range <4096-16777214>.

device(config-ingress-group)# traffic-type nvgre vsid 16777215
-----------------------------------------------------------^
%Error: Value '16777215' not in range <4096-16777214>.

device(config-ingress-group)# traffic-type nvgre vsid abc
-----------------------------------------------------------^
%Error: Unexpected token 'abc'.
```

Invalid teid:

```
device(config-ingress-group)# traffic-type gtpu teid 0
-----------------------------------------------------------^
%Error: Value '0' not in range <1-4294967295>.

device(config-ingress-group)# traffic-type gtpu teid 4294967296
-----------------------------------------------------------^
%Error: Value '4294967296' not in range <1-4294967295>.

device(config-ingress-group)# traffic-type gtpu teid abc
-----------------------------------------------------------^
%Error: Unexpected token 'abc'.
```

traffic-type ip

Configures the specific header type with the IP address to be matched for traffic classification.

Syntax

traffic-type { **gre** | **ipip** | **gtpu** | **vxlan** | **nvgre** } **ip** [*src-ip src-mask dst-ip dst-mask*]

no traffic-type { **gre** | **ipip** | **gtpu** | **vxlan** | **nvgre** } **ip**

Parameters

{ **gre** | **ipip** | **gtpu** | **vxlan** | **nvgre** }

Specifies the header to be matched for classifying the packet.

ip

Specifies the ipv4/ipv6 addresses on matching packets.
src-ip src-mask dst-ip dst-mask

Specifies the source ipv4/v6 address, source ipv4/v6 mask, destination ipv4/v6 address, and destination ipv4/v6 mask values.

Modes

Ingress-group config mode

Usage Guidelines

Validations for the command are as follows:

- This command is available only to users with admin role.
- Valid IP addresses must be provided. The following IP addresses are not valid:
  - Unspecified IPv4 address (0.0.0.0)
  - Broadcast IPv4 address (255.255.255.255)
  - Unspecified IPv6 address ("::")
  - Broadcast IPv6 address (ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff)
- Only one traffic type per ingress group is allowed.
- The configured traffic type must be removed before configuring a new traffic type.
- Existing traffic type cannot be configured again with a different ID, IP, or scope.
- Both IPv4 and IPv6 addresses are supported.
- The overlapping IP combination between different ingress-group traffic-type is not allowed.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- The no keyword can remove only the IP configuration.

Examples

The following examples configures `gtpu` traffic type with IP address.

```
device(config-ingress-group)# traffic-type gtpu ip 192.168.2.1 255.255.255.0 192.168.3.2
255.255.255.0

device# show ingress-group ing

    Name : ing
             Route-Map : -
           Description : -
            Interfaces : none
          Traffic-Type : GTPU
             Tunnel-Id : any
                  Mode : none
   Destination-ip-addr : 192.168.3.2
   Destination-ip-mask : 255.255.255.0
        Source-ip-addr : 192.168.2.1
        Source-ip-mask : 255.255.255.0
```

The following examples show error messages.

Tunnel type already configured:

```
Error: Traffic type is already configured, can't set different tunnel on same ingress-
group <name>
```

Invalid IP:

```
Error: Invalid Ip address
```

Source IP already configured:

```
Error: Source ip already configured for this traffic-type
```

Destination IP already configured:

```
Error: Destination ip already configured for this traffic-type

Error: Source and destination ip already configured for this traffic-type
```

IP already configured:

```
device(config-ingress-group)# traffic-type gtpu

Error: Traffic type is already configured with ip address
```

traffic-type vxlan outer ip

Configures VXLAN outermost header with the IP address in double encapsulation traffic.

Syntax

traffic-type vxlan outer ip *src-ip src-mask dst-ip dst-mask*

no traffic-type vxlan outer ip *src-ip src-mask dst-ip dst-mask*

Parameters

vxlan outer

Specifies the VXLAN outermost header to be matched to classify packet in double encapsulated packet.

ip

Specifies the IP address matching packets.
src-ip src-mask dst-ip dst-mask

Specifies the source ipv4 address, source ipv4 mask, destination ipv4 address, and destination ipv4 mask values.

Modes

Ingress-group config mode

Usage Guidelines

This command is available only to users with admin role.

Only vxlan tunnel is supported for outer config.

Valid IP addresses must be provided.

IPv6 is not supported for vxlan outer config.

The overlapping IP combination between different ingress-group traffic-type is not allowed.

If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.

The no keyword can remove only the IP configuration.

Examples

The following example configures the vxlan outermost header.

```
device(config-ingress-group)# traffic-type vxlan outer ip 192.168.4.2 255.255.255.0
192.168.5.2 255.255.255.0

device# show ingress-group ing
```

```
    Name : ing
             Route-Map : -
           Description : -
            Interfaces : none
          Traffic-Type : GTPU
             Tunnel-Id : any
                  Mode : none
   Destination-ip-addr : 192.168.3.2
   Destination-ip-mask : 255.255.255.0
        Source-ip-addr : 192.168.2.1
        Source-ip-mask : 255.255.255.0

   Outer Tunnel Config :
          Traffic-Type : VxLAN
             Tunnel-Id : any
   Destination-ip-addr : 192.168.5.2
   Destination-ip-mask : 255.255.255.0
        Source-ip-addr : 192.168.4.2
        Source-ip-mask : 255.255.255.0
                Mirror : none
```

The following examples show error messages.

IPv6

```
Error: IPv6 isn't supported
```

Wrong IP

```
Error: Invalid Ip address
```

Source and destination IP Configuration

```
Error: Source ip already configured for this traffic-type

Error: Destination ip already configured for this traffic-type

Error: Source and destination ip already configured for this traffic-type
```

Configure traffic-type without parameter

```
device(config-ingress-group)# traffic-type vxlan outer
Error: Traffic type for outer header config is already configured with ip address
```

traffic-type vxlan outer mirror

Configures VXLAN outermost header with the mirror action in double encapsulation traffic.

Syntax

traffic-type vxlan outer mirror *name*

no traffic-type vxlan outer mirror *name*

Parameters

vxlan outer

Specifies the VXLAN outermost header to be matched to classify packet in double encapsulated packet.

mirror

Enables the mirror action for the outer vxlan tunnel.

name

Specifies the mirror name.

Modes

Ingress-group config mode

Usage Guidelines

This is an individual command used with other **vxlan outer config** commands.

Validations for the command are as follows:

- This command is available only to users with admin role.
- Only vxlan tunnel is supported for outer config.
- The mirror must not be already configured.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- The no keyword can remove just the mirror or the entire vxlan outer config.

Examples

The following example configures the mirror for vxlan outermost header.

```
device(config-ingress-group)# traffic-type vxlan outer mirror mirr_1

device# show ingress-group ing
    Name : ing
              Route-Map : -
            Description : -
             Interfaces : none
           Traffic-Type : GTPU
              Tunnel-Id : any
```

```
                  Mode : none
   Destination-ip-addr : 192.168.3.2
   Destination-ip-mask : 255.255.255.0
        Source-ip-addr : 192.168.2.1
        Source-ip-mask : 255.255.255.0

   Outer Tunnel Config :
          Traffic-Type : VxLAN
             Tunnel-Id : any
   Destination-ip-addr : 192.168.5.2
   Destination-ip-mask : 255.255.255.0
        Source-ip-addr : 192.168.4.2
        Source-ip-mask : 255.255.255.0
                Mirror : mirr_1
```

The following example shows the error message for an already configured mirror.

```
Error: Mirror is already configured for this outer config traffic-type
```

traffic-type vxlan outer vni

Configures VXLAN outermost header for VNI match based classification.

Syntax

traffic-type vxlan outer vni *vni-value*

no traffic-type vxlan outer vni *vni-value*

Parameters

vxlan outer

Specifies the VXLAN outermost header to be matched to classify packet in double encapsulated packet.

vni *vni-value*

Specifies the VNI value to be matched. The valid range is 1-16777215.

Modes

Ingress-group config mode

Usage Guidelines

This is an individual command used with the other **vxlan outer config** commands.

Validations for the command are as follows:

- This command is available only to users with admin role.
- Only vxlan tunnel is supported for outer config.
- The VNI must not be already configured.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- The **no** keyword can remove just the VNI or the entire vxlan outer config.

Examples

The following example configures the vxlan outermost header.

```
device(config-ingress-group)# traffic-type vxlan outer vni 2000
device# show ingress-group ing

    Name : ing
             Route-Map : -
           Description : -
            Interfaces : none
          Traffic-Type : GTPU
             Tunnel-Id : any
                  Mode : none
   Destination-ip-addr : 192.168.3.2
   Destination-ip-mask : 255.255.255.0
```

```
        Source-ip-addr : 192.168.2.1
        Source-ip-mask : 255.255.255.0

   Outer Tunnel Config :
          Traffic-Type : VxLAN
             Tunnel-Id : 2000
   Destination-ip-addr : 192.168.5.2
   Destination-ip-mask : 255.255.255.0
        Source-ip-addr : 192.168.4.2
        Source-ip-mask : 255.255.255.0
                Mirror : mirr_1
```

The following examples show error messages.

VNI already configured:

```
Error: Tunnel-id is already configured for this outer config traffic-type
```

Out of range vni-value:

```
device(config-ingress-group)# traffic-type vxlan outer vni 0
%Error: Value '0' not in range <1-16777215>.

device(config-ingress-group)# traffic-type vxlan outer vni 17000000
%Error: Value '17000000' not in range <1-16777215>.
```

transport-tunnel

Creates or deletes a new transport tunnel in which various other configurations related to transport tunnel termination can be done.

Syntax

transport-tunnel *tunnel-name*

no transport-tunnel *tunnel-name*

Parameters

tunnel-name

Specifies the name of the transport tunnel. Supports 64 characters.

Tunnel name must start with an alphabet or an underscore followed by an arbitrary sequence of alphabets, numeric characters, underscores, hyphens, or dots.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

The following reserved keywords cannot be used as name identifiers: `all`, `ingress-group`, `egress`, `egress-group`, `match`, `list`, `access-list`, `route-map`, and `listener-policy`.

The transport tunnel name cannot be same as the ingress group that will be associated with this transport tunnel.

If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Table 43: Error messages

Message	Reason
`Error: transport-tunnel name identifier must start with an alphabetic character or an underscore.`	Name identifier must start with an alphabetic character or an underscore.
`Error: transport-tunnel name identifier must be an arbitrary sequence of alphabets, numerals, underscores, hyphens or dots.`	Name identifier must start with an alphabetic character or an underscore followed by an arbitrary sequence of alphabetic or numeric characters, underscores, hyphens, or dots. Name cannot exceed 64 characters.

Table 43: Error messages (continued)

Message	Reason
`Error: transport-tunnel name identifier must not be reserved keyword like all,egress… etc`	Reserved keyword cannot be used as name.
`Error: An ingress group with a route map attached should be a member of at least one interface or lag or transport tunnel.`	Attached route map is not a member of at least one interface or lag or transport tunnel. Either remove the route map from ingress group or attach the ingress group to another interface or lag or transport tunnel before removing it from this tunnel.
`Error: keypath:/transport-tunnels/transport-tunnel[name="<invalidname>"/name contains one or more unsupported character('@', '$', '#', '[', ']') for key:name`	Invalid characters used in name.

Examples

The following example configures transport tunnel.

```
device(config)# transport-tunnel tt1
device(config-tranport-tunnel)#

Show running:
device# show running-config transport-tunnel tt1
transport-tunnel tt1
```

truncate

Truncates received packets to the configured length for the current route map or listener policy.

Syntax

truncate *length*

no truncate

Parameters

length

Configures the truncated length of received packets. The valid range is 64 to 9000.

Modes

Route-map config mode

Listener-policy config mode

Route-map config mode

Usage Guidelines

Examples

The following example configures received packets to a length of 100 for the current route map and uses the show command to verify configuration.

```
device# configure terminal
device(config)# route-map mall2
device(config-route-map)# truncate 100
device(config-route-map)# end

device# show route-map mall2
route-map mall2 45
forward-action permit
truncate 100
Policy matches: 0 packets, 0 bytes, 0 Packets/secRate, 0 Bits/secRate
```

The following example configures received packets to a length of 63 for the listener policy.

```
device# configure terminal
device(config)# listener-policy lp1 <sId>
device(config-listener-policy)#  truncate 63
```

The following example deletes configured truncation for received packets for the current route map.

```
device(config)# route-map mall2
device(config-route-map)# no truncate
```

tunnel-type

Configures the source IP (with mask), tunnel-type and tunnel-ID for the packets to be terminated.

Syntax

tunnel-type [**gre** | **erspan**] [**src-ip** *ipaddr* | **mask** *mask*] [**tunnel-id** *value*]

no tunnel-type [**gre** | **erspan**] [**src-ip** *ipaddr* |**mask** *mask*] [**tunnel-id** *value*]

Parameters

gre | **erspan**

Specifies the type of tunnel to be terminated.

src-ip *ipaddr*

Specifies the Source IP to be matched.

mask *mask*

Specifies the IP address mask.

tunnel-id *value*

Specifies the tunnel ID of the tunnel.

Modes

Transport tunnel config mode

Usage Guidelines

If all parameters match along with destination MAC in chassis MAC range, packets are terminated and relevant SAP ID is attached to the packets.

Validations for the command are as follows:

- Valid tunnel type is provided.
- Valid IP address and mask are provided.
- Tunnel ID value is within allowed range.
- Only one traffic type per ingress group is allowed.
- The configured traffic type must be removed before configuring a new traffic type.

- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Table 44: Error messages

Message	Reason
`Error: Tunnel type is already configured`	Only on of each tunnel type can be configured per ingress group. Valid types are GRE or ERSPAN.
`Error: Source IP address mask is already configured`	
`Error: Deny IP address is already configured`	
`Error: Source IP address conflicts with transport-tunnel` *name* `Error: Destination IP address conflicts with transport-tunnel`*name*	Source or destination transport-tunnels IP cannot overlap.
`Error: Invalid destination IP address` `Error: Invalid source IP address`	Reserved or poorly formed IP address entered.
`Error: Cannot add/modify source IP address of existing tunnel type`	Attempt to add source IP address and mask to existing tunnel type.

Examples

The following example configures the transport tunnel, tunnel-1.

```
Device(config)# transport-tunnel tunnel-1
device(config-trs-tnl-tunnel-1)# tunnel-type erspan src-ip 10.10.10.0 mask 255.255.255.0
tunnel-id 12345

Show running:
device# show running-configuration

transport-tunnel tunnel-1
tunnel-type erspan src-ip 10.10.10.0 mask 255.255.255.0 tunnel-id 12345
```

usb enable

Enables access to the USB.

Syntax

usb enable

no usb enable

Parameters

enable

Enables access to the USB. USB access is disabled by default.

Modes

Exec mode

Usage Guidelines

This command is available only to users with admin role.

USB access is disabled after firmware upgrade, downgrade, or reboot.

The `[no]` form of the command disables access to the USB storage device.

Examples

The following example enables access to the USB.

```
device# usb enable

device# no usb enable
```

The following examples show error messages.

USB access already enabled:

```
device# usb enable
USB storage access is already enabled
```

User role:

```
device# usb
Unknown command
```

username

Configures user along with role for local authentication.

Syntax

username *username* **role** *role* **password** *password* [**encryption-level** *0* | *10*]

no username *username*

Parameters

username

Specifies the user name. The username supports 1-40 characters. Characters allowed are alpha-numeric, underscore and dot. Underscore is not allowed as the first character.

role

Specifies the pre-defined role to be assigned to the user. The supported roles are admin and user.

The role supports 4-32 characters. Characters allowed are alpha-numeric, underscore and dot. Underscore is not allowed as the first character.

password

Specifies the password of the user. Supported length of the plain text password is 8-40 and 8-128 for hashed passwords.

encryption-level *0* | *10*

Specifies whether the password input is encrypted. The values 0 and 10 indicate clear-text and encryption. The default value is 0.

Modes

Config mode

Usage Guidelines

This command is available only to users with admin role.

Table 45: Error messages

Error message	Reason
`Username validation error`	Username length should be between 1 and 40 characters. Username should contain only alpha-numeric, underscore and period. Username first letter is neither alpha-numeric nor an underscore.
`Role validation error`	Role does not exist.
`Password validation error`	Password has a bad length/size.

Examples

The following example configures users with admin and user roles.

```
NPB# configure terminal
NPB(config)# username testuser1 role admin password password123 encryption-level 0
NPB(config)# username testuser2 role user password $6$salt$cevuzTZ/QBjzuZG0/
ebEeedmcTnhyM8ITUu8K032Cp2XvIibq7voqYagm18bwpLBqrg/l/l6YxTmKKibJz5r10 encryption-level 10

NPB# show running-config username
username testuser1 role admin password $6$salt$cevuzTZ/QBjzuZG0/
ebEeedmcTnhyM8ITUu8K032Cp2XvIibq7voqYagm18bwpLBqrg/l/l6YxTmKKibJz5r10 encryption-level 10
username testuser2 role user password $6$salt$cevuzTZ/QBjzuZG0/
ebEeedmcTnhyM8ITUu8K032Cp2XvIibq7voqYagm18bwpLBqrg/l/l6YxTmKKibJz5r10 encryption-level 10
```

vlan

Configures forwarding actions by VLAN ID to be performed on outgoing packets.

Syntax

vlan *vlan-id*

no vlan *vlan-id*

Parameters

vlan-id

Specifies the VLAN ID to be configured. Valid range is 1 through 4095.

Modes

Listener-policy config mode

Usage Guidelines

Action is determined by forward-action setting in the listener policy.

- If forward-action is set to deny, packets are dropped.
- If forward-action is set to permit, the VLAN ID is changed to the configured value for permitted packets.
- Valid VLAN ID must be provided.
- VLAN ID must be unique per listener policy.

Examples

The following example configures the VLAN ID for listener policy, and then uses the show command to verify the configuration.

```
device# configure terminal
device(config)# listener-policy lp1 12
device(config-listener-policy)# vlan 500
device(config-listener-policy)# end
device#

device# show listener-policy lpl 12
forward-action permit
match ip access-list test_2 (active)
truncate 512
strip vn-tag
vlan 500
Policy matches: 0  packets, 0  bytes, 0 Packets/sec, 0 Bits/sec
```

The following example removes the VLAN ID configuration from the listener policy, and then uses the show command to verify the VLAN ID is removed from the configuration.

```
device# configure terminal
device(config)# listener-policy lp1 12
device(config-listener-policy)# no vlan
```

```
device(config-listener-policy)# end
device#

device# show listener-policy lpl 12
forward-action permit
match ip access-list test_2 (active)
truncate 512
strip vn-tag
Policy matches: 0  packets, 0  bytes, 0 Packets/sec, 0 Bits/sec
```

vlan-id

Configures VLAN ID for encapsulation of outgoing packets.

Syntax

vlan-id *vlan-id-value*

no vlan-id *vlan-id-value*

Parameters

vlan-id

Specifies the VLAN ID to be configured.

Modes

Encap configuration mode

Usage Guidelines

Validations for the command are as follows:

- Valid VLAN ID must be provided.
- Single VLAN ID per encapsulation is allowed. Already configured VLAN ID must be removed before configuring a new VLAN ID.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Examples

The following example configures the vlan-id.

```
device(config-encap-1)# vlan-id 1234
device(config-encap-1)#

Show running:
device# show running-configuration

encap encap-1
vlan-id 1234
```

The following example shows errors thrown for ID out-of-range and pre-existing vlan-id.

```
device(config-encap)# vlan-id 5000
% Value '5000' not in range <1-4095>.

device(config-encap)# vlan-id 4095
Error: Vlan Tag is already configured
```

vlan-pcp

Configures VLAN priority (PCP) value for encapsulation of outgoing packets.

Syntax

vlan-pcp *vlan-pcp-value*

no vlan-pcp *vlan-pcp-value*

Parameters

vlan-pcp *vlan-pcp-value*

Specifies the VLAN PCP value. Valid values are 0 through 7.

Modes

Encap configuration mode

Usage Guidelines

Validations for the command are as follows:

- This command is optional.
- When this parameter is not configured, the outgoing packet does not contain a VLAN header.
- If this command is enabled without configuring vlan-id, the outgoing packet will not contain the VLAN header.
- Valid VLAN PCP value must be provided.
- If another VLAN PCP is already configured, it must be removed before configuring a new VLAN PCP.
- If the same command is executed more than once, the second and subsequent executions are ignored and no error is reported.
- If the `[no]` form of the command is run without the configuration, the command is ignored and no error is reported.

Examples

The following example configures vlan-pcp and verifies the configuration with the show command.

```
device# configure terminal
device(config)# encap encap-1
device#(config-encap)# vlan-id 4000
device(config-encap)# vlan-pcp 2

device(config-encap)# end

device# show running-config encap encap-1
encap encap-1
  vlan-id 4000
  vlan-pcp 2
```

The following example shows the error that is thrown when the vlan-pcp value is outside the valid range.

```
device(config-encap)# vlan-pcp 100
% Value '100' not in range <0-7>.
```